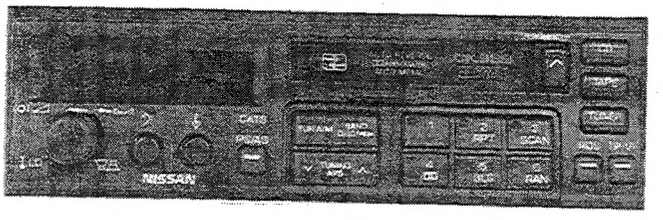
Clarion Co., Ltd. Export Division—22-3, Shibuya 2-chome, Shibuya-ku, Tokyo, 150 Japan Tel: 03-3400-1121 Fax: 03-3400-8679 Telex: J22908, J22152
Service Dept.—50 Kamitoda, Toda-shi, Saitama, 335 Japan Tel: 0484-43-1111 Telex: J2962628 CLAFAC-J

clarion Service Manual

Published by Service Administration Section

CLAR -00361



NISSAN Automobile Genuine LW/MW/FM-MPX Synthesizer Radio Cassette Combination

Model PN-9526U (CK98B)

(Genuine No. B8025-C9982)

■SPECIFICATIONS:

● Radio section

Circuit system:	Superheterodyne
Tuning system:	Electronic tuning
Receive range:	LW 153kHz to 281kHz
	MW 531kHz to 1,602kHz
	UKW(FM)
	87.5MHz to 108MHz
Intermediate frequency:	
	LW 450kHz
	MW 450kHz
	UKW(FM)
	10.7MHz
Quieting sensitivity:	LW Less than 40dB (at 20dB S/N)
	MW Less than 32dB (at 20dB S/N)
	UKW(FM)
	Less than 15dB (at 30dB S/N)
Separation:	UKW(FM)
	More than 20dB
Auto tuning stop sensitivity:	
	LW DX 32±6dB
	LO 52±6dB
	MW DX 32±6dB
	LO 52±6dB
	UKW(FM)
	DX 23±6dB
	LO 46±9dB

● Tape section

Reproduction system:	
	4 track, 2 channel stereo cassette tape playback
Tape speed:	4.76cm/sec. (1-7/8 ips)
Wow and flutter:	Less than 0.18% (W.R.M.S)
S/N ratio:	NORM (120μs)
	More than 48dB (DD OFF)
	More than 56dB (DD ON)
	MTL (70μs)
	More than 50dB (DD OFF)
	More than 58dB (DD ON)
Cross talk:	More than 40dB
Separation:	More than 30dB
FF/REW time:	Less than 130sec. (C-60)

● Synthesis

Power supply voltage:	
	DC 13.2V (10.8V to 15.6V)
	Negative ground
Current consumption:	
	Less than 7.5A
Load impedance:	4Ω×2, 4Ω×4
Power output:	More than 9W×2 (at 3% distortion)
Dimensions:	Width 180mm
	Height 52mm
	Depth 160mm
Weight:	1.4kg

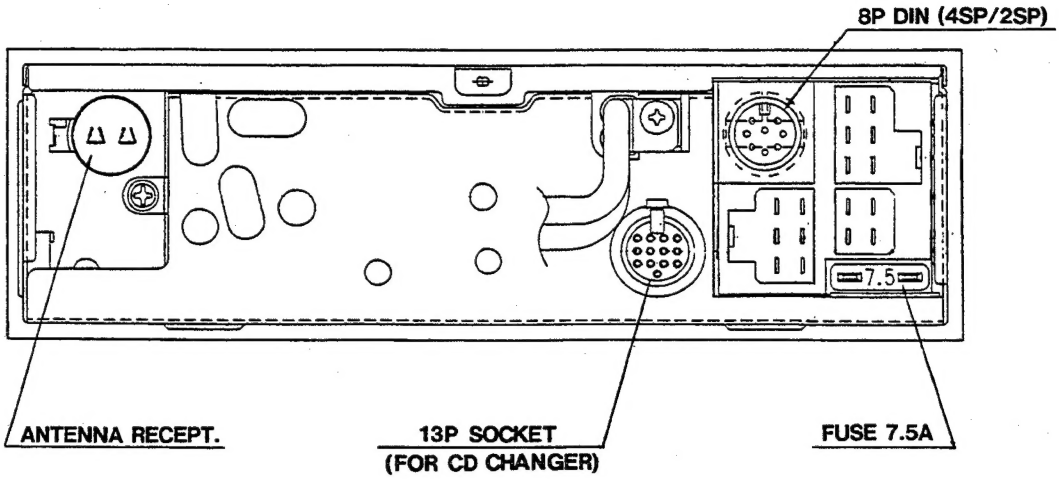
- Dolby Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

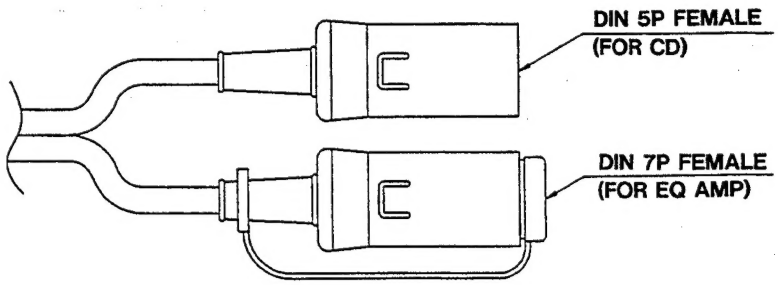
■COMPONENTS:

● PN-9526U-A

Main unit		1
Antenna jumper	093-0842-01	1
Parts bag	921-8408-00	1
Machine screw	714-5008-41	4
D-sems screw	735-5008-11	2
Parts bag	922-2165-00	1
Plug	076-0397-02	1
Sticker	291-0051-01	2
Carrying case	346-0071-01	1

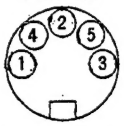
■REAR VIEW and CONNECTORS:





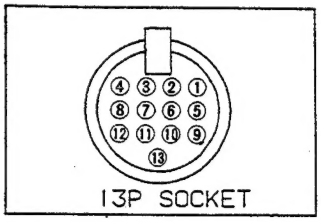
LOCATION

FOR CD



DIN 5P FEMALE

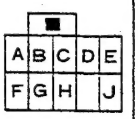
1	CD-ON SIGNAL (COMBI←CD)
2	COMBI-ON SIGNAL (COMBI→CD)
3	SIGNAL GROUND
4	L-CH INPUT
5	R-CH INPUT



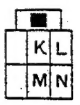
13P SOCKET

1	C-BUS DATA
2	C-BUS CLOCK
3	
4	C-BUS SERVICE REQUEST
5	
6	Signal GND
7	CD L-ch input
8	CD R-ch input
9	
10	BACK UP
11	REMOTE CONTROL
12	GND
13	

LOCATION



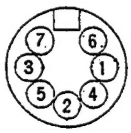
S10 MW



S06 MW

A	FRONT LEFT SP.⊕
B	FRONT RIGHT SP.⊕
C	BACK UP
D	LIGHTING SWITCH
E	ACC
F	FRONT LEFT SP.⊖
G	FRONT RIGHT SP.⊖
H	ANT. SIGNAL
J	GROUND
K	REAR LEFT SP.⊕
L	REAR RIGHT SP.⊕
M	REAR LEFT SP.⊖
N	REAR RIGHT SP.⊖

FOR EQ AMP



DIN 7P FEMALE

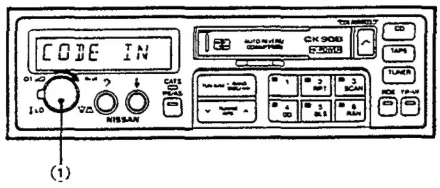
1	
2	Signal GND
3	Remote control
4	R-ch output
5	R-ch input
6	L-ch output
7	L-ch input

■THEFT PREVENTION:

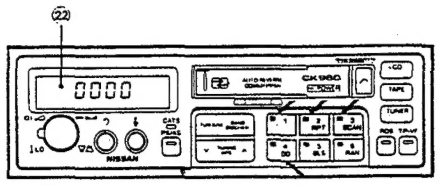
Operation

*** Unlocking the unit**

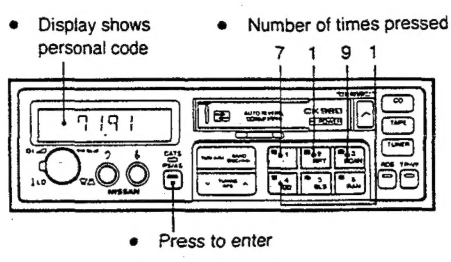
1. Make the necessary wire connections (watch out for wrong connections).
2. If the unit is switched on, the display ㉒ will show "***CODE IN***".



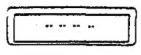
3. Press one of preset buttons (1, 2, 3 or 4), then "***OOOO***" is shown on the display ㉒.



4. Enter your personal code number by pressing preset buttons 1, 2, 3, 4 the required number of times to display the code.
5. Press the PS/AS button ⑥ to enter the code. The radio/cassette combination will operate.



6. If the wrong code number is entered, the display shows "--------" Wait ten seconds, then enter the correct code.



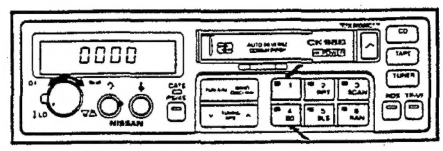
Note:

There are two ten-second waiting periods after a wrong code number has been entered. Then waiting periods of fifteen minutes duration will follow. This function is designed to prevent a thief from trying to guess the code number.

*** Clearing the code**

When the vehicle requires servicing, it is important to clear the personal code from the Anti-theft system. Clearing the code will allow the technician to interrupt the battery supply (for maintenance work, etc.) without locking the unit.

1. Turn the audio unit off.
2. Press and hold preset buttons 1 and 4.
3. Switch on the unit while buttons 1 and 4 are being pressed to display "***CODE IN***".
4. Switch off the unit.
5. Switch on the unit again while buttons 1 and 4 are being pressed to display "***OOOO***".



6. Enter your personal code number as previously described.
7. Press the PS/AS button ⑥ to enter the code. The display will momentarily flash "***CLEAR***" and the radio/cassette combination will operate.

Note:

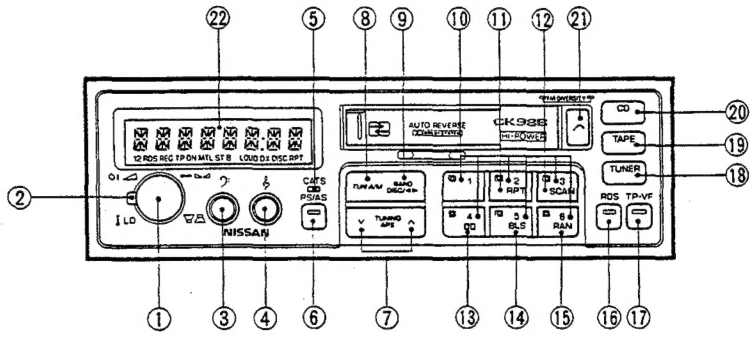
- If the wrong code number has been entered, the display will not change and the radio will not operate. To enter the correct code number, switch off and repeat the procedure.
- In the cleared condition, each time the unit is switched on, "***CLEAR***" will flash momentarily on the display.
- Do not leave the vehicle unattended or parked in a high-risk area when the code has been cleared. The Anti-theft system is inactive.

*** Reactivating the code**

Reactivate the code as soon as the vehicle returns from servicing, etc.

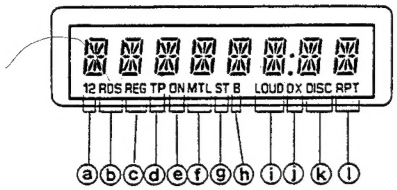
1. Turn the radio unit off.
2. Press and hold down preset buttons 1 and 4.
3. Turn the radio on while buttons 1 and 4 are being pressed.
   The display will momentarily flash "***CODE IN***" and the unit will operate.

■OPERATION:



① Power Switch (ol)/Volume Control ( )/Balance Control ( )/Loudness Switch (LD)
② Fader Control knob ( )
③ Bass Control knob ( )
④ Treble Control knob ( )
⑤ CATS indicator
⑥ Preset Scan/Auto Store Switch (PS/AS)
⑦ Fast Forward/Rewind Button/APS Switches (Auto Programme Search)
⑧ Tuning Mode Switch (TUN A/M)
⑨ Band Selector Switch/Disc UP Search Switch/Play Button/Programme Switch
⑩ Preset Buttons (1, 2, 3, 4, 5, 6)
⑪ Repeat Switch (RPT)
⑫ Tape Scan Switch (SCAN)
⑬ Dolby NR Switch (DD)
⑭ Blank Skip Switch (BLS)
⑮ Random Play Switch (RDM)
⑯ RDS Switch (RDS)
⑰ Traffic Programme Switch (TP-VF)
⑱ Tuner Mode Switch (TUNER)
⑲ Tape Mode Switch (TAPE)
⑳ CD Selector Switch (CD)
㉑ EJECT Button ( )
㉒ Display

■Display



- ⓐ FM BAND Indicator
- ⓑ RDS Indicator
- ⓒ Regional Indicator
- ⓓ TP Indicator
- ⓔ TP-ON Indicator
- ⓕ METAL Indicator
- ⓖ STEREO (ST) Indicator
- ⓗ Dolby B NR Indicator (▯▯)
- ⓘ Loudness Indicator (LOUD)
- ⓙ DX Indicator
- ⓚ Disc Indicator (DISC)
- ⓛ Repeat Indicator (RPT)

* **Tape Mode Switch** ☛ ⑲
While listening to the radio or CD, press this switch to start cassette tape playback.

* **Play/Programme Switch** ☛ ⑨
Press this switch from any tape mode to start tape playback. Playback starts automatically when you press the Tape Mode Switch ⑲ during radio reception or CD playback.
Press the Play/Programme switch during playback to reverse the tape transport direction and listen to the opposite side. The display will show in which direction the tape is playing, as follows:

Tape transport direction	
TAPE ❯❯	Upper tracks playing
TAPE ❮❮	Lower tracks playing

* **APS (Auto Programme Search) Switches** ☛ ⑦
Press the FF or REW button twice to activate APS. The tape is forwarded or rewound to the beginning of the next or previous track, from which point normal playback resumes.

* **Repeat Switch (RPT)** ☛ ⑪, ⓛ
In the tape mode, press this switch to repeat playback of a track. "REPEAT" is displayed on the display.
When playback of the current track is complete, the tape is rewound and playback of the track is repeated.
Press the switch once more to disengage the repeat mode.

* **Blank Skip Switch (BLS)** ☛ ⑭
In the tape mode, press this switch to activate the Blank Tape Skip mode. "BLANK" is displayed on the display.
If a blank tape portion exceeding 10 seconds is found during playback, the tape will be forwarded automatically to the beginning of the next track.
Press the switch once more to disengage the Blank Tape Skip mode.

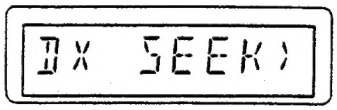
* **Tape Scan Switch (SCAN)** ☛ ⑫
In the tape mode, press this switch to activate the Tape Scan mode. When engaged, the indicator above the switch lights.

When the Tape Scan mode is engaged, pressing the FF button ⑦ twice to engage SCAN, the tape is fast forwarded to the next track, 10 seconds of the track is played, and so on. During Forward Scanning, "FF SCAN" is displayed.
To cancel Tape Scan, press this switch again.
To scan the tape in the reverse direction, press the REW button ⑦. During Reverse Scanning, "REW SCAN" is displayed.

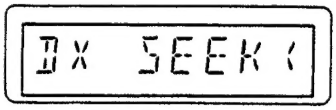
* **Tuner Mode Switch (TUNER)** ☛ ⑱
When listening to a CD or a cassette tape, press this switch to change the set to the radio.

* **Tuning Mode Switch (TUN A/M)** ☛ ⑧
Use this switch to select between the manual and seek tuning modes.
"MANU" is displayed when manual tuning is engaged. After selecting the desired mode, use the TUNING button (∧ or ∨) ⑦ for tuning.
The mode will automatically return to seek tuning five seconds after manual tuning has been set or completed.

* **Seek Tuning** ☛ ⓙ
Press the TUN A/M switch to clear "MANU" in the display. Also, if no button is pressed for five seconds when the Manual Tuning mode has been engaged, the unit will revert to the Seek Tuning mode.
Press the right side (∧) of the TUNING button ⑦ to search for broadcasting stations at higher frequencies and to tune in the next station. Press the left side (∨) to search at lower frequencies. "DX SEEK >" or "DX SEEK <", respectively, is displayed.

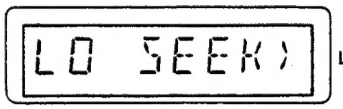


DX SEEK Up

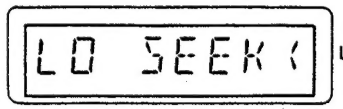


DX SEEK Down

When pressing the TUNING button ⑦, the DX mode is set. To seek for stations in the Local mode (with lowered sensitivity), press the TUN A/M switch ⑧ for 2 seconds or more. In this case, "LO SEEK >" or "LO SEEK <" will be displayed.



Local SEEK Up



Local SEEK Down

- Use Local Seek (LO) to search for strong stations only, and DX SEEK for all other stations.

* **Preset Buttons** ☛ ⑩
It is possible to programme six stations on each of the FM 1, FM 2 and MW/LW bands. Each Preset button has two functions, depending on how long it is kept pressed.
- Press the Preset button for less than two seconds to recall a Preset station.
- Press the Preset button for more than two seconds to memorise the tuned in station.

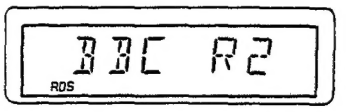
* **Preset Scan/Auto Store Switch (PS/AS)** ☛ ⑥
This switch has two functions, depending on how long it is kept pressed.
Pressing this switch for more than two seconds, up to six strong stations in the area are stored automatically on the six presets for the selected band.
Pressing the switch for less than two seconds, the preset stations on the selected band are scanned.

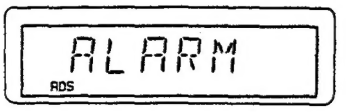
■Using the Radio Data System (RDS)

* **RDS Switch** ☛ ⑯, ⓑ
- This switch is off when the unit is turned on for the first time.
- RDS only works on the FM band.
- When the RDS switch is switched on, "RDS" is displayed.

1. When an RDS broadcast station is received, the name of the received station will be displayed (PS: Programme Service name).
2. If the receiving conditions worsen while receiving an RDS broadcast, the unit will automatically switch to another frequency on which the same broadcast is available under better receiving conditions.
3. When an emergency broadcast, in which a PTY (Programme-Type code) alarm code is transmitted, is received during the reception of an RDS broadcast, "ALARM" will be displayed and the volume level will be increased and the broadcast message is heard.
   Notes:
   1. Even when listening to a tape or CD, the unit will switch to the radio and the emergency broadcast can be listened to. At this time the radio operation buttons cannot be used.

2. By switching off the RDS switch during the emergency broadcast, the set will return to the tape or CD operation mode.





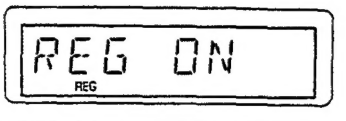
4. When the receiving conditions worsen while receiving an RDS broadcast and there is no stronger broadcast station transmitting the same broadcast, "RDS" will start flashing in a little while.
   When the receiving conditions improve, the flashing of "RDS" will stop.

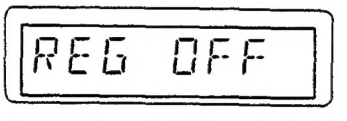
5. When the right side (∧) or the left side (∨) of the TUNING button ⑦ is pressed while the RDS switch is on, the unit will only search for stations broadcasting RDS signals.

6. Preset Scan during RDS reception:
   Pressing the PS/AS switch ⑥ for less than two seconds when the RDS switch is switched on, only preset stations broadcasting the RDS signal will be tuned in.
   Auto Store during RDS reception:
   Pressing the PS/AS switch ⑥ for more than two seconds when the RDS switch is switched on, only RDS stations with different programme content will be stored on the Preset buttons ⑩.

- **Same Programme Search**
  (PI: Programme Identification)
  If you press a Preset button ⑩ on which an RDS station is stored and the station cannot be received (RDS indicator flashes), press the same Preset button ⑩ one more time ("SEARCH" is shown in the display). The set will search for stations at other frequencies with the same programme content, i.e. the same PI code, as the station stored in memory. Thus, a desired programme can easily be tuned in although the broadcasting frequency is unknown.

- **REG (Regional) Switching** ☛ ⑯
  1. Pressing the RDS switch ⑯ for 2 seconds or longer permits on/off switching of the Regional mode. The initial setting is the on state in which the "REG" indicator is lit.
     "REG ON" is displayed when the Regional mode is engaged, and "REG OFF" is displayed when the mode is disengaged.

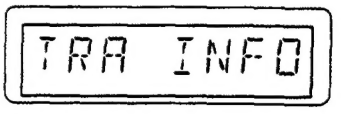




  2. When the Regional mode is engaged (REG indicator lit), only the same station is automatically tracked.
     When the Regional mode is off, the local programme is tracked and you can continue to listen to a programme being switched from one station to another without any interruption.

Note:
REG only works on the FM band.

* **Traffic Programme Switch (TP-VF)** ☛ ⑰
  1. The TP-VF switch is off when the unit is turned on for the first time.
  2. When the TP-VF switch is switched on, "ON" is displayed.
     When a TP-VF station is received, the TP-VF indicator lights. This indicates that the station is broadcasting the RDS TP code or the SK signal in case of ARI broadcasts.
     When the TP-VF switch is on and a station broadcasting traffic announcements is tuned in, the TP-VF ON indicators light.
     "TRA INFO" is displayed when a traffic information announcement is broadcast. The volume will increase to the preset level and you will hear the traffic announcement.



Notes:
1. Even when listening to a tape or CD, the unit will switch to the radio and the traffic information announcement can be listened to.
   At this time the radio operation buttons cannot be used.
2. Switching off the TP-VF switch during the traffic information announcement, the unit will return to the tape or CD operation mode.

3. When the right side (∧) or the left side (∨) of the TUNING button ⑦ is pressed while the TP-VF switch is on, the unit will only search for stations broadcasting the TP-VF signal.

Note:
When this button is pressed in areas where traffic information is not broadcast, the seek operation is not cancelled and so the TP-VF switch should be switched off to stop seek tuning.

4. Preset Scan when the TP-VF switch is on:
   Pressing the PS/AS switch ⑥ for less than two seconds when the TP-VF switch is switched on, only preset stations broadcasting the TP-VF signal will be tuned in.
   Auto Store when the TP-VF switch is on:
   Pressing the PS/AS switch ⑥ for more than two seconds when the TP-VF switch is switched on, only stations broadcasting traffic information announcements will be stored on the Preset buttons ⑩.

Note:
The TP-VF switch only works on the FM band.

5. In the tape mode or the CD mode when the TP-VF indicator is lit, switching on the RDS switch ⑯ will provide continuous, automatic tracking of the TP-VF station.

* ***CD Selector Switch (CD)*** ☛ ⑳
This switch is used to switch from the tuner, cassette deck, or an external accessory component to the CD Changer mode. CD playback starts when this switch is pressed from the Tuner or Cassette mode.
When the CD Selector Switch ⑳ is pressed, "CD LOAD" is displayed, the power to the CD Changer is switched on, and playback starts from the first track on the first disc. (First time only)
If no magazine has been set in the CD Changer, "NO MAGAZ" will be displayed.
When the CD Selector Switch ⑳ is pressed, the display will first show "CD LOAD", then the disc number, and upon that the track number. During actual disc play, both the track and the played time will be displayed.
Refer to the figure on the right for the display messages:

Display System		
①	CD selection	CD LOAD
②	DISC display	Disc No. 08 DISC
③	TRACK display	TRACK No. 08 TRACK
④	During play	TRACK No. 08 P-TIME 00:00
	Random play	RANDOM
	No magazine	NO MAGAZ
	No such disc	NO DISC

■ Last Position Memory Function

This function stores in memory the track that was being played when the power was switched off while a CD was playing or when another mode was selected. The next time playback on the CD Changer is selected, play will begin from the beginning of the last track played.

* **Disc UP Search Switch** ☛ ⑨

This button is used when you wish to listen to a different CD.

Pressing the Disc UP switch ⑨, the CD Changer will set the next higher disc, the disc number will be displayed, and playback continues from the selected disc.

With each subsequent press of the switch, the disc number will change and the disc corresponding to the number displayed on the digital display at that time will be played.

If there is no disc in the place corresponding to the displayed number, "NO DISC" will be displayed on the digital display and the player will automatically change to the next disc and play it.

■ Track Search ☛ ⑦

Press the right side of the TRACK button (∧) to start playback from the next track. Press the left side of the TRACK button (∨) to return to the beginning of the track currently being listened to and continue play from there.

To move ahead or back several tracks at once, press either side of the TRACK button repeatedly.

■ Fast Forward/Fast Return ☛ ⑦

Keeping the right side of the TRACK button (∧) pressed, high-speed playback in the forward direction is engaged.

Keeping the left side of the TRACK button (∨) pressed, high-speed playback in the reverse direction is engaged.

Release the button to stop high-speed playback and resume normal playback.

* **Repeat Switch (RPT)** ☛ ⑪, ①

Press the RPT switch once to repeatedly play back the current selection. The RPT indicator will light.

Press the RPT switch once more for repeat playback of the current DISC. The DISC and RPT indicators will light.

Press the RPT switch a third time to disengage repeat playback, and confirm that the DISC and RPT indicators go off.

* **Tape Scan Switch (SCAN)** ☛ ⑫

Pressing the SCAN switch causes the indicator at the top of the switch to light and the CD Changer to play the first 10 seconds of each track on the loaded CDs.

When the track you are searching for is played, press the SCAN switch again to continue playback of that track. At the same time the indicator will go off.

* **Random Play Switch (RDM)** ☛ ⑬

Pressing the RDM switch causes the indicator at the top of the switch to light, "RANDOM" is displayed, and random play of all tracks on the selected disc begins.

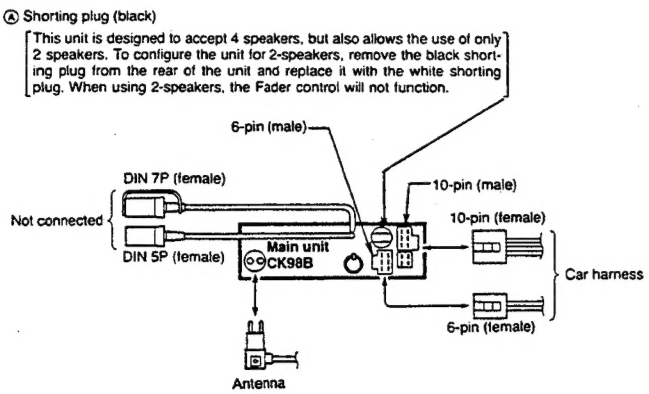
When all of the tracks on the disc have been played once, the next disc is selected and random playback of that disc continues.

When there are no more discs left in the magazine, random playback will start anew from the first disc in the magazine.

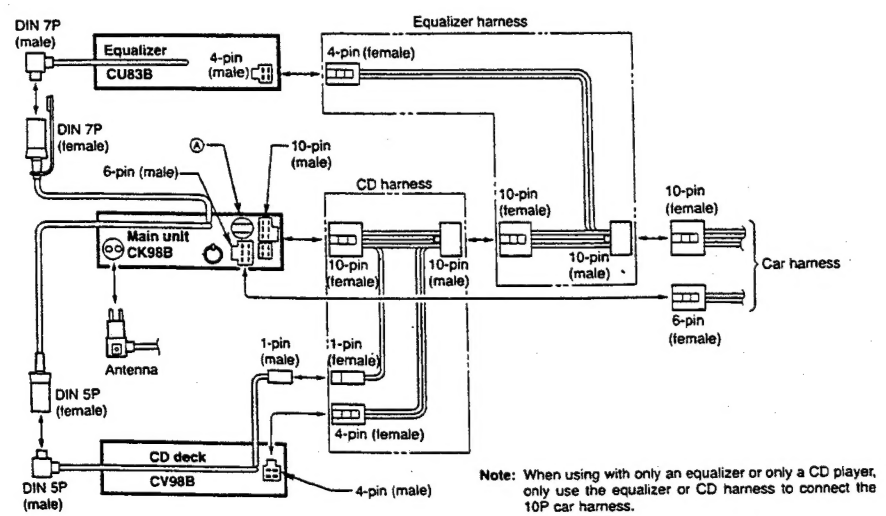
To cancel random playback, press the RDM switch once more and make sure "RANDOM" disappears from the display.

■WIRE CONNECTION:

1) When using only with the main unit

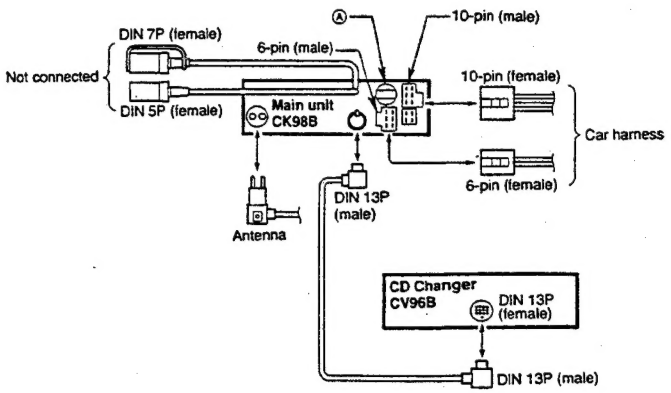


2) When using with an Equalizer or CD DECK

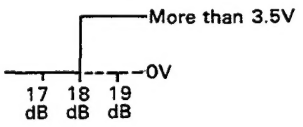
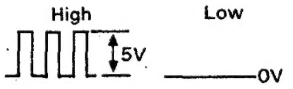


Note: When using with only an equalizer or only a CD player, only use the equalizer or CD harness to connect the 10P car harness.

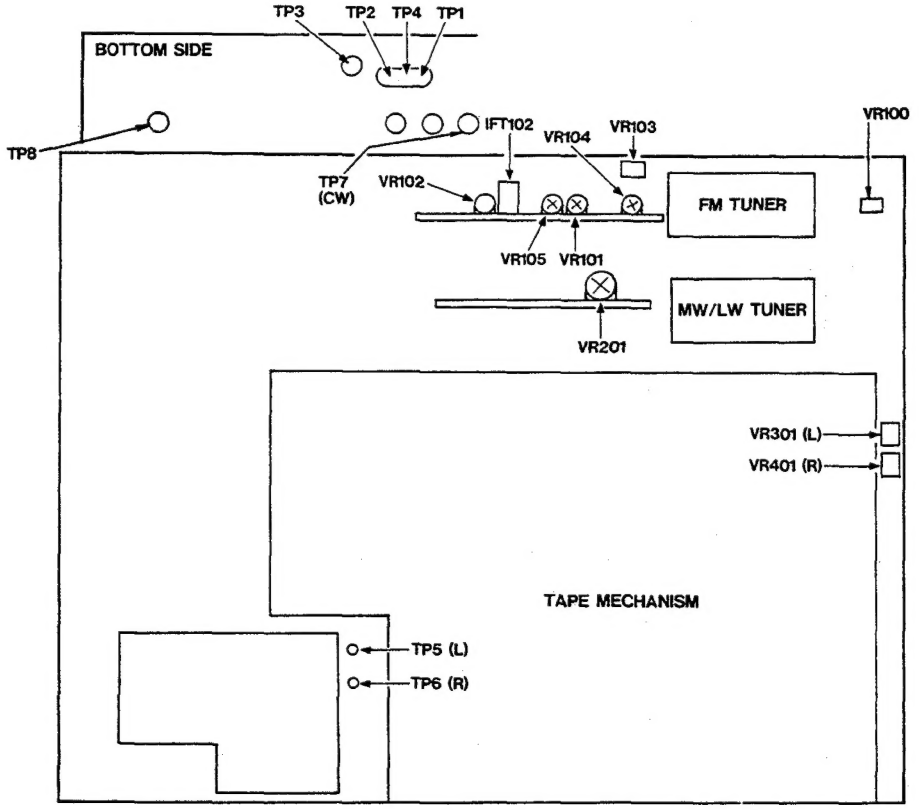
3) When using with the CD CHANGER



■ADJUSTMENT:

Adjustment item	Adjustment point	Procedure
0V	IFT102	1. Connect the digital voltmeter to TP1 and TP2. 2. Input the 98.1MHz/55dB signal and adjust the reading of digital voltmeter to 0.0V±30mV by IFT102.
Limiter	VR104	1. Input the 98.1MHz, 55dB SSG signal. (1kHz, 30%) 2. Adjust VR to make the set output 0dB (2.45V). 3. Reduce the output of SG 10dB. 4. Adjust VR104 untill output level decrease to 3dB.
SD	VR105	1. Input the 98.1MHz/20dB signal (1kHz MOD). 2. Adjust VR105 so that the voltage of TP4 is in the range 0V to 3.5V. 
Diversity Sensitivity	VR100	1. Connect the digital voltmeter to TP8 and GND. 2. Input the 98.1MHz frequency at 20dB and adjust the level to 160mV±10mV by VR100.
S-meter	VR103	1. Connect the digital voltmeter to TP3. 2. Input the 98.1MHz frequency at 55dB (1kHz MOD) and adjust the level to 4.5V±0.1V by VR103.
SASC	VR101	1. Input the 98.1MHz/65dB, 7kHz modulation frequency, 30% modulation degree SSG signal. 2. Adjust the output level of the volume controller to 0dBm (0.775V). 3. Set the SSG output to 35dB and adjust VR101 so that the output level is −2dB.
Separation	VR102	1. Input the 98.1MHz, connect the output of a stereo modulator to the external modulation terminal, and input a 65dB SSG signal. 2. Set the stereo modulator to the L or R ch and adjust VR102 so that the maximum separation is obtained.
CW (Carrier Wave)	VR201	1. Input the 98.1MHz/55dB, 1kHz (MONO) modulation frequency, 2.0kHz modulation rate SSG signal. 2. Connect the oscilloscope to TP7. 3. Adjust VR103 so that the waveform of TP7 is in the range 5V to 0V. (1.9kHz→Low, 2.1kHz→High) 
Dolby NR	VR301 and VR401	Insert a Dolby level test tape (400Hz−200nWb/m), connect the milli-volt meter to TP5 and TP6, and adjust VR301 and VR401 to obtain an output of 245mV±1dB.

● ADJUSTMENT POINT



■EXPLANATION OF IC's:

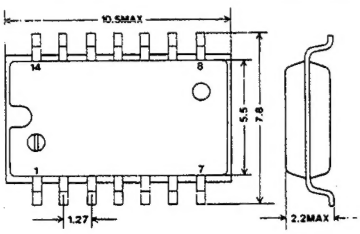
Refer to description in IC service manual vol. 1.			
KC-819	051-0606-01	Hybrid IC for Tone Control	P23

Refer to description in IC service manual vol. 2.			
NJM2058M	051-0556-01	Quad. OP. Amp.	P41
LA2000C	051-0620-00	Music Interval Detection	P43

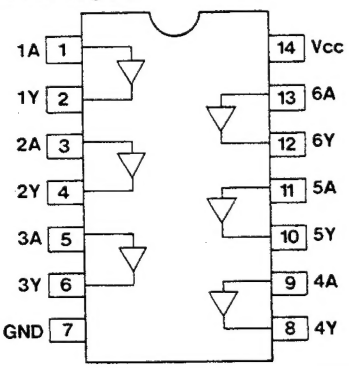
Refer to description in IC service manual vol. 3.			
μPD7225G-00	051-1151-00	Programmable LCD Controller/Driver	P27
TC4013BF	051-0142-05	C-MOS IC	P44
M5201FP	051-0853-01	Switch OP. Amp.	P30
MB3771PF(-G)	051-0869-05	Power source voltage Supervisory IC	P41
LC7070NM	051-1150-00	Sync/Error correction LSI for RDS	P11
LB0354	051-0619-01	Loudness with Muting	P22
TA8205AH	051-0958-01	15W BTL×2 ch Power Amp.	P24
CXA1102M	051-1038-01	Dolby B Type Noise Reduction System	P14
TA7705F	051-0714-01	Dual Preamp for Auto reverse Car stereo	P13
NJL5161K-P	051-1114-00	Super-Thin type Photoreflector	P38

■HD74LS07FPD 051-0160-56 Hex Buffers/Drivers

Outward Form



Block Diagram



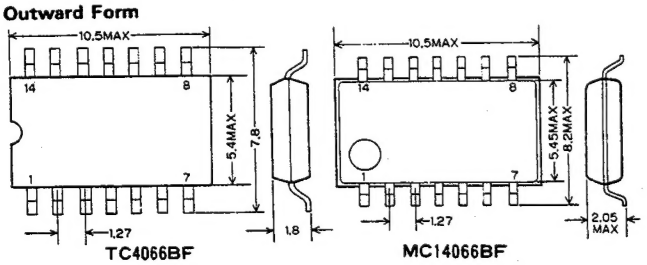
Truth Table

A	Y
H	H
L	L

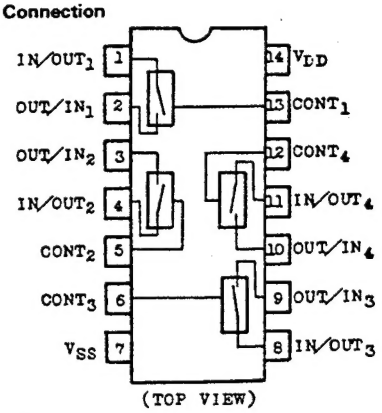
Y = A

■TC4066BF 051-0267-05 / MC14066BF 051-0267-35 QUAD BILATERAL SWITCH

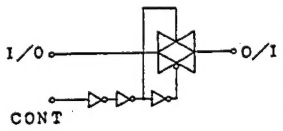
Outward Form



Terminal Connection



Block Diagram

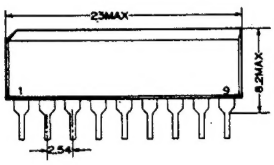


Truth Table

CONTROL	Impedance Between IN/OUT-OUT/IN
H	0.5~5×10²Ω
L	>10⁹Ω

■TA7372P 051-1282-00 FM Diversity

Outward Form

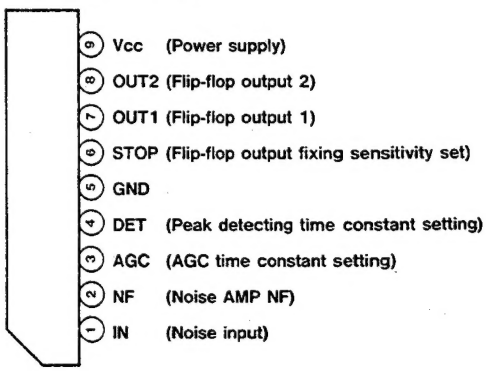


Outline

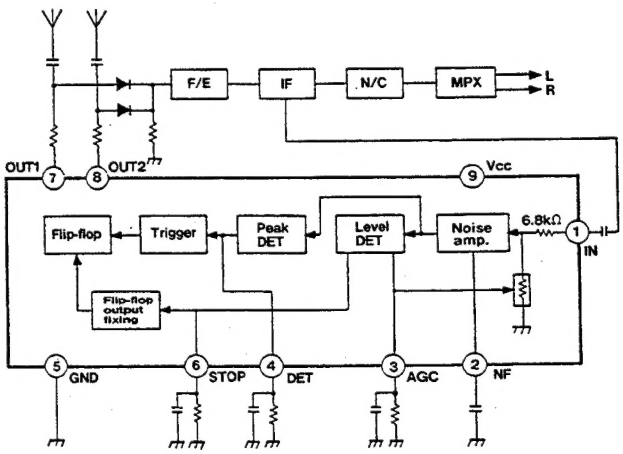
This IC is used for FM diversity in selecting the better one of 2 antennas by detecting the increase of noise amount from the receiver.

- It effectively acts for multi-path strain and skip noise.
- Mounting this IC to the conventional FM car radio, it makes FM diversity.
- By the built-in AGC-circuit contents, noise can be widely detected.
- By fixing on either antenna at weak input time, it is possible to suppress the abnormal noise generated at the time of weak input.
- Operation power supply voltage range : Vopr=7~15V (Ta=25°C)

Terminal Arrangement Diagram

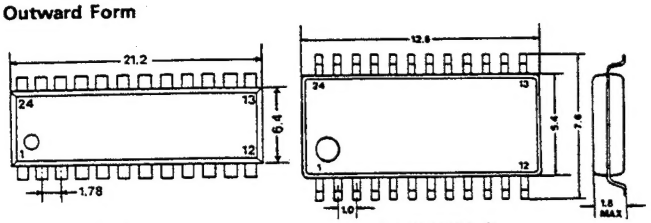


Block Diagram



■LA2231-A 051-1144-01 / LA2231M-B 051-1144-10 RDS Decoder

Outward Form

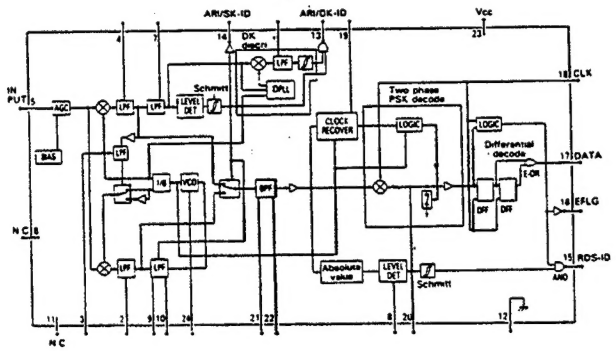


LA2231-A LA2231M-B

Function

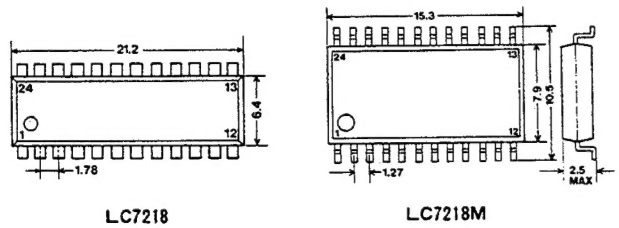
(1) DSB demodulation.
(2) Sub-carrier wave regeneration.
(3) Bit rate clock regeneration.
(4) Data differential decoding.
(5) ARI-SK discrimination.
(6) ARI-DK discrimination.
(7) RDS indicator driving
(8) ARI indicator driving.
(9) Data error indicating output

Block Diagram



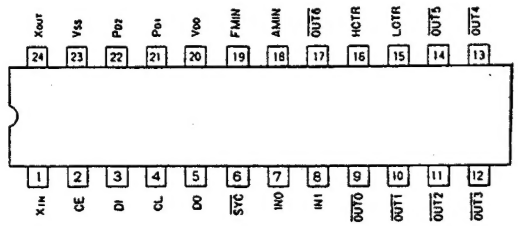
■LC7218 051-1323-00 / LC7218M 051-1323-05 Electronic Tuning PLL Frequency Synthesizer

Outward Form

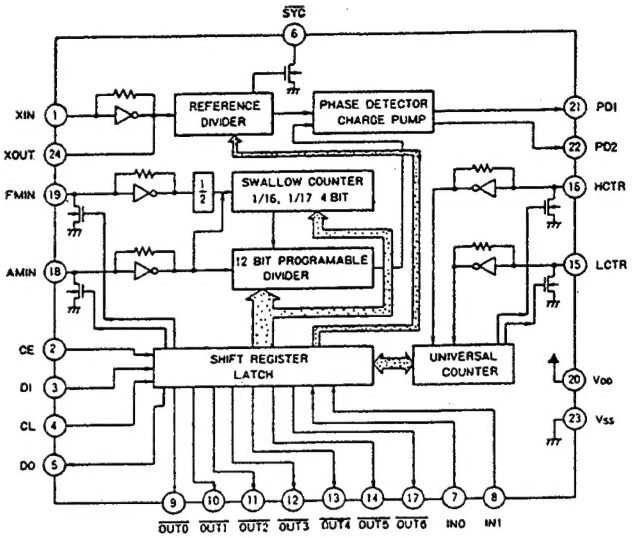


LC7218 LC7218M

Terminal Connection



Block Diagram

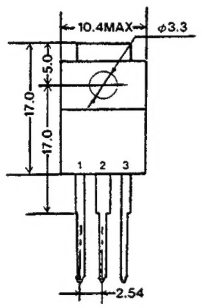


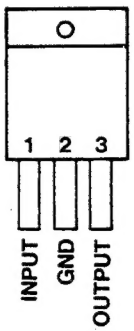
Terminal Connection Table

No.	Terminal name	Function
1 24	X_{IN} X_{OUT}	Crystal connecting terminal. (7.2MHz)
2	CE	Chip enable terminal: H level when input and output serial data.
3	DI	Input data terminal: Serial data input, transferred from controller to this IC.
4	CL	Clock terminal: Synchronous clock when input and output serial data.
5	DO	Output data terminal: Serial data output, transferred from this IC to controller.
6	SYC	Controller clock terminal. (400kHz)
7 8	IN0 IN1	Input port: Signal from both terminals is transformed from parallel to serial data, output from DO output terminal.
9 ⋮ 14 17	OUT0 ⋮ OUT5 OUT6	Output port: Serial data $O_0 \sim O_6$ transferred from controller is latched, inverting data to output parallel data.,
15	LCTR	General purpose counter frequency/input terminal for cycle measuring signal.
16	HCTR	Input terminal for signal measuring general purpose counter frequency.
18	AMIN	Input terminal for local oscillating signal.
19	FMIN	Input terminal for local oscillating signal.
20	V_{DD}	Power terminal.
21 22	PD1 PD2	Charge pump output terminal.
23	V_{SS}	Ground terminal.

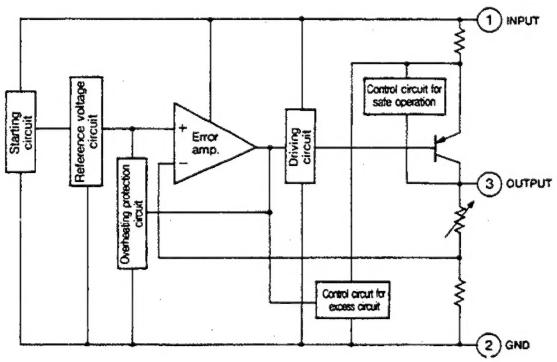
■μPC2410HF 051-1272-00 Stable Power Supply of Positive Voltage

Outward Form **Terminal Connection**





Block Diagram

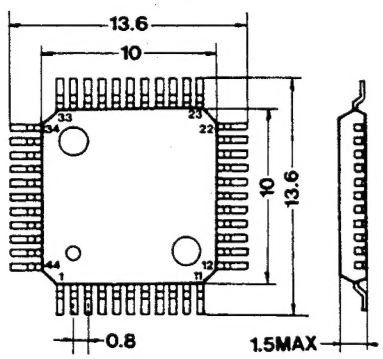


Electrical Characteristics (Ta=25°C, V_{IN}=15V, I_O=500mA)

Item	Symbol	Condition	Min	Typ	Max	Unit
Output voltage	V_O	0℃ ≤Ta≤125℃ 11V≤V_{IN}≤25V 5mA≤I_O≤500mA	9.7		10.3	V
Input stability	REG_{IN}	11.5V≤V_{IN}≤25V		12	100	mV
Load stability	REG_{L_1}	5mA≤I_O≤1A		6	100	mV

■μPD75006GB-546-3B4 051-1301-21 SF-X mechanism controller

I **Outward Form**



II **Terminal Description**

Pin No.	Terminal name	I/O	Function
1	NC	O	Unused (open).
2	MTL OUT	O	Output for a change-over to the metal mode. This terminal is used for switching over the equalizer of the preamplifier, changing the output signal to "Hi" when the output signal of Terminal 5 is "Low".
3	5V-REMOTE	O	ON/OFF controller for 5V power source. "Hi" when Acc is ON. "Low" when Acc is OFF.
4	APC DETECT	I	Detection of the level for selecting music. "Low" during the interval between pieces of music. "Hi" when music is playing.
5	MTL-SW	I	Detection of a metal tape. "Low" in the case of a metal tape. "Hi" in the case of a normal tape.
6	PACK-SW	I	Detection of the presence of cassette tape. "Low" only when the pack is set in the fixed position. "Hi" in other cases.
7	PLAY-SW	I	Detection of the PLAY mode. "Low" when it is in the PLAY mode. "Hi" in other cases.
8	STOP-SW	I	Detection of the STOP mode. "Low" when it is in the STOP mode. "Hi" in other cases.
9	EJECT-END SW	I	Detection of the completion of EJECT operation. "Low" when the EJECT is completed. "Hi" in other cases.
10	FF-SW	I	Detection of FF (REW) position. "Low" when it is in the FF (REW) APC mode. "Hi" in other cases.
11	NC	–	Unused (GND).
12	NC	–	Unused (open).
13	DOLBY ON/OFF	O	Output of the DOLBY ON/OFF signal. "Hi" when DOLBY is ON. "Low" when DOLBY is OFF.
14	DOLBY B/C	O	Output of the DOLBY B/C change-over signal. "Low" when DOLBY is in B. "Hi" when DOLBY is in C.
15	AUX/TAPE	O	Output of the AUX/TAPE change-over signal. "Low" when it is in the CD/TUNER mode. "Hi" when it is in the TAPE mode.
16	$\overline{SRQ}$	O	Serial bus line SRQ port. A selected piece of music plays when the service request mode is "Low". "Hi" normally.
17	Vss	–	GND.
18	XT1	–	Connected to GND.
19	XT2	–	Open.
20	$\overline{RESET}$	I	Detection of RESET mode. "Low" when it is in the RESET mode.
21 22	X1 X2	–	Main system clock.
23 24 25	P-P3 P-P1 P-P2	O O O	Output of a power motor control signal.

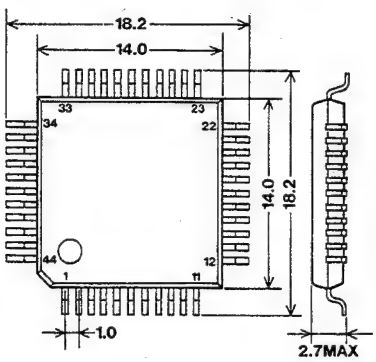
Operation mode	P-P1	P-P2	P-P3
EJECT mode	L	L	L
EJECT in operation	L	L	H
Hold	L	H	H
Unused	H	L	H
Head shift	H	H	L
Loading	H	H	H

Pin No.	Terminal name	I/O	Function
26 27 28	M-P2 M-P1 M-P3	O O O	Output of a main motor control signal. Operation mode / M-P1 / M-P2 / M-P3 STOP: L L L PLAY (FWD): L L H Change-over of both direction and speed of rotation: L H H PLAY (REV): H L H FWD-FF, REV-REW: H H L FWD-REW, REV-FF: H H H
29 30 31	S-SI S-SO SCK	I O I	Serial bus line SI port. Serial bus line SO port. Serial bus line SCK port.
32	Acc-CONT	I	Acc control. Input "Hi" when Acc is ON. Input "Low" when Acc is OFF.
33	P13	–	Connected to GND.
34	NC	–	Unused (open).
35	FWD-REEL	I	Detection of a reel rotation in the FORWARD side.
36	LOAD-START	I	Detection of the start of tape loading. Input "Hi" when loading starts to operate.
38	NC	–	Unused. Connected to V_{DD}.
39	V_{DD}	–	5V power source.
40	MECH Vcc	O	ON/OFF control of the mechanism power source. Output "Hi" when the power source is ON. Output "Low" when it is OFF.
41	MECH. $\overline{MUTE}$	O	Mute control. Output "Low" when MUTE is ON. Output "Hi" when MUTE is OFF.
42	PRE F/R	O	FWD/REV change-over. Output "Hi" when it is in the FWD mode. Output "Low" when it is in the REV mode.
43	APC P/F	O	Change-over of input level. Output "Low" when it is in the PLAY mode. Output "Hi" when it is in the FF·REW mode.
44	P73	O	Open.

■TA8151F(CLAR) 051-1371-00 FM PROCESSOR

TA8151 is a FM tuner IC, which is integrated from IF to MPX stages into one chip.

Outward Form



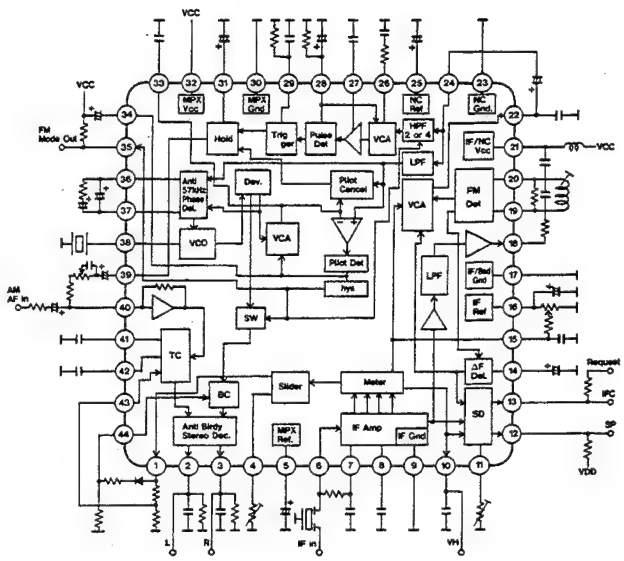
Function

IF·····IF limiter amplification/differential peak FM detection/meter output/electric field strength muting/detuning muting/stop detection/IF counting request.

NC ·····Noise detection/noise AGC/noise detecting wave changeover/signal delay/unadjusted pilot cancellation/signal holding.

MPX ·····Unadjusted PLL method stereo decoder/blender control/tone control (low-cut, high-cut)/anti-ARI/anti-birdie.

Block Diagram



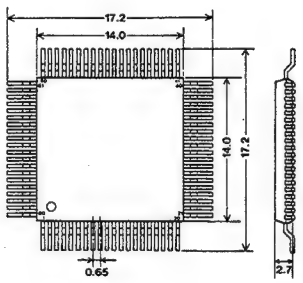
Terminal Connection

Pin No.	Symbol	Function
1	SO	Slider output terminal.
2	L out	MPX output terminal.
3	R out	
4	Slide	Blender of MPX unit, controllable range setting terminal for electric field strength of tone.
5	Ref. 3	3rd nominal voltage terminal.
6	IF in	IF amp. input terminal.
7	Bias	Provide bias to 6th pin via R.
8	By 1	IF amp. bypass terminal.
9	G 1	IF amp. ground terminal.
10	Meter	Meter output terminal in FM mode, and meter input terminal for slider circuit in AM mode.
11	SD	Sensitivity setting terminal of station detector.
12	SP	Pulse counting output terminal stopped by station detector.
13	IFC	IF counting output terminal.
14	ΔF	ΔF detector output smoothing terminal.
15	SM	Soft-mute characteristic setting terminal.
16	Ref 1	1st nominal voltage terminal.
17	G 4	Sub-straight ground terminal.
18	IF out	IF limiter amp. output terminal.
19	Det 1	Input terminal of differential peak detection.
20	Det 2	
21	B 1	Power terminals of IF and NC units.
22	AF out	Audio signal output terminal.
23	G 2	Ground terminal.
24	NC in	Input terminal of noise canceler unit.
25	Ref 2	2nd nominal voltage terminal.
26	By 2	AGC amp. bypass terminal of noise canceler unit.
27	By 3	Noise amp. bypass terminal of noise canceler unit.
28	AGC	Noise AGC time-constant setting terminal of noise canceler unit.
29	PW	Trigger-pulse range setting terminal of noise canceler unit.
30	G 3	Ground terminal of MPX unit.

Pin No.	Symbol	Function
31	Hold	Composite signal holding terminal of noise canceler unit.
32	B 2	Power terminal of MPX unit.
33	P	Canceling signal output terminal for pilot cancellation.
34	PiD	Output terminal of pilot detection circuit.
35	Mode	Mode output terminal of stereo/mono selection.
36	PhD1	Output terminal of phase detection circuit.
37	PhD2	
38	VCO	VCO circuit oscillation terminal.
39	NC out	Noise canceler output terminal.
40	MPX in	MPX input terminal.
41	LC	Cut-off frequency setting terminal.
42	HC	
43	TC	Tone-control (low-cut, high-cut) control terminal.
44	BC	Blender control terminal.

■μPD75328GC-167-3B9 051-1380-10 Slave Micro Computer

Outward Form



Outline

(1) The IC, as slave microcomputer, is to have function for data communication via serial bus interface with master microcomputer.
(2) RDS decoder IC and synchronizing/correcting IC are controlled to input RDS data.

Terminal Connection

Pin No.	Terminal Name	I/O	Function
1–28		O	Unused (OPEN).
29	$\overline{\text{DK IND}}$	I	ARI DK IND detection port. Active : LOW
30	$\overline{\text{SK IND}}$	I	ARI SK IND detection port. Active : LOW
31	$\overline{\text{RDS IND}}$	I	RDS IND detection port. Active : LOW
32	M6/$\overline{\text{M5}}$	I	Detection port of M6/M5 selection. High=M6, Low=M5
33	GND	I	
34	R/$\overline{\text{CD}}$	O	RADIO/CD audio changeover port. High=RADIO, Low=CD Auto Changer
35	$\overline{\text{REMOTE}}$	O	REMOTE Output port. Active : LOW
36	$\overline{\text{MUTE}}$	O	MUTE Output port. Active : LOW
37	$\overline{\text{SRQ}}$	O	Service Request Output port. Active : LOW
38	ACC DET	I	Detection port of ACC power ON/OFF (POWER DCP) master microcomputer controls ACC-CONT. High=ACC-ON, Low=ACC-OFF Active : High
39	$\overline{\text{SCK}}$	O	Serial bus line SCK port.
40	SO	O	Serial bus line SO port.
41	SI	I	Serial bus line SI port.
42	RDS CLK	I	RDS CLOCK input port. RDS data is input from LC7070.
43 44		I	GND
45	PLL DO IN	I	PLL data input.
46	RDS DATA	I	RDS DATA input port. RDS data is input from LC7070.
47	RDS START	I	RDS DATA START bit input port. RDS data is input from LC7070.
48	RDS ERROR	I	ERROR LOW : Incorrectable error occurred. HI : No error occurred or corrected.
49	RDS CORR	I	CORRECTION

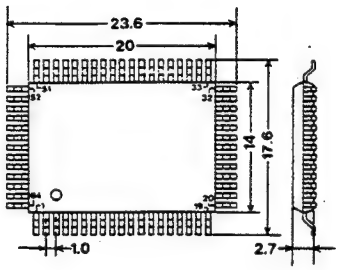
	CORR	ERROR
No error	H	H
Corrected	L	H
Incorrectable	L	L

50		O	Unused (OPEN).
51	PLL CLK	O	PLL clock output.
52	PLL DI OUT	O	PLL data output.
53	PLL CE	O	PLL chip enable port. Active : High
54	LPF change-over	O	Low-pass filter changeover port.
55	ST ON/OFF	O	Stereo/mono changeover port. Active : High
56	ANT DUMP	O	Hi : Antenna sensitivity decreased. Active : High
57	AV_{REF} OUT	O	A/D nominal voltage output.
58	FM S-METER	I	FM s-meter input. (Analog input)
59 60 61 62 63		I	GND.
64	A/D GND	I	A/D converter GND.
65	A/D REF	I	Input of A/D converter nominal voltage.
66	V_{DD}		Supply voltage of 5V.
67	XT1	I	GND.
68	XT2	–	Unused (OPEN).
69	V_{PP}		Connect to V_{DD}.
70 71	X1 X2		System clock.
72	$\overline{\text{RESET}}$	I	RESET input. Active : Low
73	$\overline{\text{RDS}}$ RESET	O	Function to reset LC7070. Active : Low
74	IF REQ	O	IF REQUEST output port. Active : High
75	IF MUTE	O	IF MUTE output. Active : High
76	$\overline{\text{DX}}$/LO	O	DX/LO changeover output port. Low : DX, High : Local
77		I	GND.
78	FM SD	I	FM SD input port. Active : High
79	$\overline{\text{CW}}$ IN	I	CW (Carrier Wave) detection input port. Active : Low
80	$\overline{\text{ST}}$ IN	I	ST detection input port. Active : Low

■μPD75116GF-763-3BE 051-1455-00 Master Micro Computer

Note: With the aid of the diode switch (initializing diode matrix), this microcomputer is available for SF-X mechanism (full logic mechanism) and RM-4 (mechanical mechanism). Some functions of each terminal and key may be classified by setting the diode switch.

I. Outward Form



II. Outline

(1) The IC, as master microcomputer, is to have function for data communication via serial bus interface with slave microcomputer, SF-X mechanism microcomputer, CD auto-changer.
(2) LCD driver is controlled by serial data.
(3) Tuner unit is compatible with RDS.
(4) DCP (Detachable Control Panel).
(5) Dual illumination.
(6) Direct changeover for TAPE/RADIO/CD auto-changer.

III. Terminal Connection

Pin No.	Terminal Name	I/O	Function
63 64 1 2 3 4 5 6	KO3 KO2 KO1 KO0 KO7 KO6 KO5 KO4	O	Key scan signal output.
7	$\overline{\text{RESET}}$	I	RESET signal input. Usually, High
8 9	X2 X1		System clock.
10 11 12 13 14 15 16 17	CATS-LED CH1-LED CH2-LED CH3-LED CH4-LED CH5-LED CH6-LED W ILLMI	O	CATS-LED output. CH1-LED output. CH2-LED output. CH3-LED output. CH4-LED output. CH5-LED output. CH6-LED output. DUAL-ILLUMI output.
19 20	D-SET D-RESET	O	Flip-flop control output for serial interface (C-BUS).
21	DK-OUT	O	Output of LOW signal with VOL increasing, when interrupted with traffic information and emergency broadcasting.
22	LOUD-OUT REMOTE	O	LOUDNESS ON/OFF signal output. LOUDNESS ON : High
23	MTL-OUT	O	(1) SF-X mechanism Unused (OPEN) (2) RM-4 mechanism METAL ON/OFF signal output. METAL ON : High
24	CD-STOP	O	CD STOP signal output. CD STOP : High
25	REM-1	O	AMP. power supply ON/OFF control signal output. AMP. ON : High
26	Vss	I	GND.
27	PS/AS	I	PS/AS detect signal input. Active : High In TUNER ON, the preset scanning operation is started when the key is released within 2 sec, while the auto store operation is started when the key is held down over 2 sec.
28	GND	I	
29	EJECT	I	(1) SF-X mechanism EJECT key detect signal input. Detection is made at High. (2) RM-4 mechanism Unused (OPEN).
30	$\overline{\text{BACK UP}}$	I	Input terminal to detect +B (battery) power off: Low when +B is off.
31	GND	I	
32	$\overline{\text{LCD-BUSY}}$	I	LCD-BUSY input. Active : Low
33 34	GND	I	
35	GND	I	
37	$\overline{\text{LCD-RESET}}$	O	LCD-RESET output. Active : Low
38	ACC-CONT REM-2	O	ACC control signal output for slave microcomputer. ACC ON : High, ACC OFF : Low
39	APC-ON /OFF	O	(1) SF-X mechanism Unused (OPEN). (2) RM-4 mechanism APC ON/OFF signal output. APC ON : High
40	BEEP	O	Sensor tone signal output. (4kHz)
41	SI	I	Serial bus line data input.
42	SO	O	Serial bus line data output.
43	$\overline{\text{SCK}}$	O	Serial bus line clock output.
44	ACC IN	I	ACC power ON/OFF detect input. ACC power ON : High ACC power OFF : Low
45	$\overline{\text{SRQ}}$	I	Serial bus line SRQ (Service Request) input. Request queuing occurred at "Low" position. Normally "High" position.
46	$\overline{\text{PACK IN}}$	I	(1) SF-X mechanism Unused (GND). (2) RM-4 mechanism Cassette PACK IN/OUT signal input. PACK IN : Low, PACK OUT : High
47	FWD/$\overline{\text{REV}}$	I	(1) SF-X mechanism Unused (GND). (2) RM-4 mechanism Tape running direction detect signal input. FWD : High, REV : Low
48	$\overline{\text{CD-REMOTE}}$	I	CD PLAY detect signal input. CD PLAY : Low, CD STOP or CD OFF : High
49 50	DOLBY-ON DOLBY-BC	O	(1) When DOLBY C is set to ON by the diode switch. Pin 49 / Pin 50 / DOLBY H / H / DOLBY C H / L / DOLBY B L / L / OFF (2) When DOLBY C is set to OFF by the diode switch. Pin 49 / Pin 50 / DOLBY L / H / DOLBY B H / L / OFF
51	$\overline{\text{R/T}}$	O	(1) SF-X mechanism Unused (OPEN). (2) RM-4 mechanism RADIO/TAPE selector. TAPE : High, RADIO : Low
52	$\overline{\text{MUTE}}$	O	System MUTE signal output. MUTE ON : Low, MUTE OFF : High
53 54 55 56	KEYIN3 KEYIN2 KEYIN1 KEYIN0	I	Key signal input.
57	Vpp		Connect to V_{DD}.
58	V_{DD}		Supply voltage of 5V.
59	LCD C/$\overline{\text{D}}$	O	LCD-COMMAND/DATA output. COMMAND : High, DATA : Low
60	LCD-$\overline{\text{CS}}$	O	LCD-CHIP SELECT output. Active : Low
61	LCD-DATA	O	LCD-DATA output.
62	LCD-SCK	O	LCD-SCK output.

Ⅳ. Key Matrix

§ 1. Key Matrix Table

OUT / IN	KOUT0 (pin2)	KOUT1 (pin1)	KOUT2 (pin64)	KOUT3 (pin63)	KOUT4 (pin6)	KOUT5 (pin5)	KOUT6 (pin4)	KOUT7 (pin3)
KEYIN0 (pin56)		M1	M2	M3	RDS	TP		DOLBC
KEYIN1 (pin55)		M4	M5	M6	CD	TUNER	DOM/EXP	M5/M6
KEYIN2 (pin54)		UP	DOWN	T-MODE	PSAS	STMONO	LOUD	MINIJA
KEYIN3 (pin53)		BAND/PRO	TAPE	LOUD2		ILLUMI		SFX

Momentary SW　　Diode SW

Note: This microcomputer set is not always equipped with all of these keys.

§ 2. Diode Switch (Initializing Diode Matrix)

* The following table shows that the diode is SHORT in case of "1" and OPEN in case of "0".

Switch Name	Function
DOLBC	Set DOLBY B-C or DOLBY B. 0: DOLBY B 1: DOLBY B-C
SFX	Set RM-4 or SF-X mechanism. 0: RM-4 mechanism 1: SF-X mechanism
MINIJA (Use only for RM-4 mechanism)	Set CD deck or portable CD player. 0: Portable CD player 1: CD deck
DOM/EXP	Set TP key function. 0: Only TP ON/OFF key 1: When key is released within 2 sec: TP ON/OFF When key is held down over 2 sec: VOL. adjust
M5/M6	Set M1~M6 keys function. 0: M1/REP, M2/SCAN, M3/DOL, M4/BLS(APC), M5/RDM(MTL) 1: M1, M2/REP, M3/SCAN, M4/DOL, M5/BLS(APC), M6/RDM(MTL) ( ) ··· RM-4 mechanism

§ 3. Momentary Switch

Switch Name	Function
TUNER	TUNER ON key.
BAND PRO	o BAND selector key when TUNER ON. FM1 → FM2 → AM(MW/LW) o The function changes with the mechanism when TAPE ON. (1) SF-X mechanism Program change or PLAY key. (2) RM-4 mechanism Key is invalid. o DISC UP key when CD ON.
TAPE	TAPE ON key.
PS/AS	In TUNER ON, the preset scanning operation is started when the key is released within 2 sec, while the auto store operation is started when the key is held down over 2 sec.
LOUD LOUD2	LOUDNESS ON/OFF key.
CD	CD auto changer ON key.
T-MODE	In TUNER ON, the UP and DOWN key operation is selected when the key is released within 2 sec., while the DX/LO operation is selected when the key is held down over 2 sec.
UP DOWN	The function changes with each operation of TUNER, CD, and TAPE keys. o When TUNER ON MANU ON: Manual UP/DOWN MANU OFF: Seek UP/DOWN o When CD ON When the key is pressed over 1 sec: FF/FB start When the key is pressed within 1 sec: Track UP/DOWN o When TAPE ON (1) SF-X mechanism: FF/REW start key. SCAN OFF: REW ⟷ REW APC FF ⟷ FF APC SCAN ON: REW ⟷ SCAN REW APC FF ⟷ SCAN FF APC (2) RM-4 mechanism: The key is invalid.
M1~M6	Preset channel 1~6 call and write key.
REPEAT, SCAN, DOLBY, BLS, RANDOM, (APC), (MTL)	Keys to ON/OFF each function. ( ) ··· RM-4 mechanism
STMONO	ST/MONO selector key.
ILLUMI	Illumination selector key.
RDS	o Push RDS key for less than 2 seconds to shift RDS ON/OFF. o Push RDS key for more than 2 seconds to shift REG ON/OFF. o Push M3 key following to RDS key within 2 seconds to display "PTY" o Push M1 key following to RDS key within 2 seconds to display presently receiving "PI" for 5 seconds.
TP	o When diode switch "DOM/EXP" is ON TP ON/OFF key. o When diode switch "DOM/EXP" is OFF (1) Push TP key for less than 2 seconds to shift TP ON/OFF. (2) Push TP key for more than 2 seconds to shift into sound volume adjusting mode.

■PARTS LIST:

◎Electrical section

◎MAIN P.W.B

REF NO.	PART NO.	DESCRIPTION	Q'TY
D605,609,610 611,612	001-0330-00 001-0294-00	DIODE 1SS119 DIODE 1SS133	5
D105,501,601 602,613,614	001-0356-00 001-0506-00	DIODE 1SS184 DIODE DAN202K	6
D608	001-0361-10	DIODE 1SS198	1
D101,102	001-0367-00	DIODE 1SS226	2
D110,111	001-0368-00	DIODE 1SV121	2
D103,104,505	001-0421-24 001-0423-24	DIODE MTZJ9.1 DIODE MA4091	3
D901,902	001-0466-00 001-0499-00	DIODE S5688B DIODE ERA15-01	2
D603,604	001-0525-00	DIODE IMN10	2
IFT102	005-1017-00	IF-TRANSFORMER	1
IFT101	005-1022-51	IF-TRANSFORMER	1
L501	009-0633-01	CHOKE	1
L104,105	010-1892-07	COIL	2
L106	010-2174-35	COIL *820 μH	1
L103	010-2174-36	COIL *1mH	1
L110,111	010-2199-04	COIL *0.22 μH	2
L101	010-2199-16	COIL *2.2 μH	1
L102	010-2199-21	COIL *5.6 μH	1
L190	010-2199-34	COIL	1
L112	010-2199-35	COIL *82 μH	1
L201	010-2199-40	COIL *220 μH	1
VR501	012-3808-07	VARIABLE-R 22kΩ	1
VR301,401	012-4318-06	VARIABLE-R 10kΩ	2
VR201	012-4318-09	VARIABLE-R 47kΩ	1
VR100	012-4318-11	VARIABLE-R 220kΩ	1
VR103	012-43 8-13	VARIABLE-R 470kΩ	1
VR101,102	012-4863-07	VARIABLE-R 22kΩ	2
VR105	012-4863-10	VARIABLE-R 100kΩ	1
VR104	012-4863-12	VARIABLE-R 330kΩ	1
C501,506	042-0417-00	ELECTROLYTIC-C 10V 220 μF	2
C609	042-0467-00	ELECTROLYTIC-C 5.5V 0.1F	1
C150	043-0229-01	CERAMIC-CHIP-C 0.068 μF	1
C119,139	043-0229-03	CERAMIC-CHIP-C 0.1 μF	2
CCT601	050-0077-02	COMPONENT-CCT 10kΩ x 4	1
CCT602	050-0088-07	COMPONENT-CCT 1kΩ x 7	1
CCT901	050-0090-62	COMPONENT-CCT 10kΩ x 10	1
CCT201	050-0101-01	COMPONENT-CCT 10kΩ x 11	1
IC604	051-0142-05	IC TC4013BF	1
IC603	051-0160-56	IC HD74LS07FPD	1
IC103	051-0267-05	IC TC4066BF	1
IC202,504	051-0556-01	IC NJM2058M	2
IC503	051-0606-71 051-0606-01	HIC	1
IC502	051-0619-01	IC LB0354	1
IC205	051-0620-00	IC LA2000C	1
IC301,401	051-0853-01	IC M5201FP	2
IC605	051-0869-05	IC MB3771PF	1
IC501	051-1038-01	IC CXA1102M	1
IC505	051-1111-01	IC TA8210AH	1
IC203	051-1144-10	IC LA2231M	1
IC204	051-1150-00	IC LC7070NM	1
IC902	051-1272-00	IC μPC2410HF	1
IC101	051-1282-00	IC TA7372P	1
IC901	051-1301-21	IC μPD75006GB-546-3B4	1
IC104	051-1323-05	IC LC7218M	1
IC102	051-1371-00	IC TA8151F	1
IC602	051-1375-05	IC BR93C46F	1
IC201	051-1380-10	IC μPD75328GC-167-3B9	1
IC601	051-1455-00	IC μPD75116GF-763-3BE	1
X202	060-0115-02	CERAMIC-RESONATOR	1
SUP101,102	060-0122-10	SURGE PROTECTOR	2
X201,601,901	060-0130-50	CERAMIC-RESONATOR 4.19MHz	3
X203	060-0146-50	CERAMIC-RESONATOR	1
BPF201	060-0177-00	BAND-PASS-FILTER	1
BPF101	060-0235-00	BAND-PASS-FILTER	1
DC101	060-0236-00	DC-DC-CONVERTER	1
X101	060-0240-00	CERA-RESONATOR	1
X102	061-1066-00	CRYSTAL *7.2MHz	1
Q618	100-1150-00	TRANSISTOR *2SA1150	1

REF NO.	PART NO.	DESCRIPTION	Q'TY
Q103,203,620 622,901,902	100-1162-00	TRANSISTOR *2SA1162	6
Q108,109	100-1297-00	TRANSISTOR *2SA1297	2
Q505,903,905	100-1431-00	TRANSISTOR *2SA1431	3
Q110	102-1846-00	TRANSISTOR *2SC1846	1
Q105,107,113 616,623,904	102-2712-00	TRANSISTOR *2SC2712	6
Q114,115,120 121	102-2712-51	TRANSISTOR *2SC2712GR	4
Q111,112	102-3624-00	TRANSISTOR *2SC3624	2
Q617	102-3732-00	TRANSISTOR *2SC3732	1
Q104,501	103-1306-00	TRANSISTOR *2SD1306	2
Q508	103-1858-50	TRANSISTOR *2SD1858	1
Q106	108-0372-28	TRANSISTOR *2SK372	1
Q201,503,601	125-0002-03 125-0014-03	TRANSISTOR *RN2403 TRANSISTOR *DTA124	3
Q510	125-0003-03	TRANSISTOR *RN2203	1
Q101,102,116 202,502,507 615,619,621 624	125-2004-03	TRANSISTOR *RN1403	10
Q604,606,607 608,609,610 906	125-2004-06	TRANSISTOR *RN1406	7
R154	116-1011-10	CHIP-RESISTOR 1/8W 100Ω	1
R637	116-1541-10	CHIP-RESISTOR 1/8W 150kΩ	1
R909	116-2721-10	CHIP-RESISTOR 1/8W 2.7kΩ	1
R138,310,410	117-1011-10	CHIP-RESISTOR 1/10W 100Ω	3
R131,134,159 219,508,514 558,624,628 632,635	117-1021-10	CHIP-RESISTOR 1/10W 1kΩ	11
R105,115,124 125,130,142 143,151,187 205,206,214 215,221,503 504,507,511 512,518,520 521,619,620 623,627,631 629,634,636 901～905 908,910,911	117-1031-10	CHIP-RESISTOR 1/10W 10kΩ	38
R133,152,155 186,203,209 351,451,502 626,630	117-1041-10	CHIP-RESISTOR 1/10W 100kΩ	11
R213,625,639 913	117-1051-10	CHIP-RESISTOR 1/10W 1MΩ	4
R189,190	117-1221-10	CHIP-RESISTOR 1/10W 1.2kΩ	2
R188	117-1231-10	CHIP-RESISTOR 1/10W 12kΩ	1
R122,158,307 407	117-1521-10	CHIP-RESISTOR 1/10W 1.5kΩ	4
R302,350,402 450	117-1531-10	CHIP-RESISTOR 1/10W 15kΩ	4
R184	117-1541-10	CHIP-RESISTOR 1/10W 150kΩ	1
R182	117-1821-10	CHIP-RESISTOR 1/10W 1.8kΩ	1
R104,116	117-1831-10	CHIP-RESISTOR 1/10W 18kΩ	2
R108,114,141 144,157,216 304,306,404 406	117-2221-10	CHIP-RESISTOR 1/10W 2.2kΩ	10
R202,308,408 622	117-2231-10	CHIP-RESISTOR 1/10W 22kΩ	4
R129,137,201 202,207	117-2241-10	CHIP-RESISTOR 1/10W 220kΩ	5
R110,317,417	117-2711-10	CHIP-RESISTOR 1/10W 270Ω	3
R181	117-2721-10	CHIP-RESISTOR 1/10W 2.7kΩ	1
R303,403,501	117-2731-10	CHIP-RESISTOR 1/10W 27kΩ	3
R604,607,608 609,610,611	117-3311-10	CHIP-RESISTOR 1/10W 330Ω	6

REF NO.	PART NO.	DESCRIPTION	Q'TY
R118,119,120 121,135,145 156,210,211 305,405	117-3321-10	CHIP-RESISTOR 1/10W 3.3kΩ	11
R111,183,185 301,401	117-3331-10	CHIP-RESISTOR 1/10W 33kΩ	5
R641	117-3341-10	CHIP-RESISTOR 1/10W 330kΩ	1
R153	117-3921-10	CHIP-RESISTOR 1/10W 3.9kΩ	1
R217	117-3941-10	CHIP-RESISTOR 1/10W 390kΩ	1
R550	117-4331-10	CHIP-RESISTOR 1/10W 43kΩ	1
R208,907	117-4701-10	CHIP-RESISTOR 1/10W 47Ω	2
R117,132,148 509,906	117-4721-10	CHIP-RESISTOR 1/10W 4.7kΩ	5
R107,113,123 557,617,618 640	117-4731-10	CHIP-RESISTOR 1/10W 47kΩ	7
R128,139	117-4741-10	CHIP-RESISTOR 1/10W 470kΩ	2
R126	117-5611-10	CHIP-RESISTOR 1/10W 560Ω	1
R204,621,633	117-5621-10	CHIP-RESISTOR 1/10W 5.6kΩ	3
R180	117-5631-10	CHIP-RESISTOR 1/10W 56kΩ	1
R109	117-6801-10	CHIP-RESISTOR 1/10W 68Ω	1
R136	117-6811-10	CHIP-RESISTOR 1/10W 680Ω	1
R103,112,149 642	117-6821-10	CHIP-RESISTOR 1/10W 6.8kΩ	4
R102,146,191 212	117-6831-10	CHIP-RESISTOR 1/10W 68kΩ	4
R127	117-8221-10	CHIP-RESISTOR 1/10W 8.2kΩ	1
R106,638	117-8231-10	CHIP-RESISTOR 1/10W 82kΩ	2
R218	117-8241-10	CHIP-RESISTOR 1/10W 820kΩ	1
R515	118-1011-10	CHIP-RESISTOR 1/2W 100Ω	1
R140,150	118-5611-10	CHIP-RESISTOR 1/2W 560Ω	2
C512	172-1042-20	POLYESTOR-C 0.1 μF	1
C162	172-6832-20	POLYESTOR-C 0.068 μF	1
C318,418	173-1022-10	POLYESTOR-C 0.001 μF	2
C320,321,420 421	173-1542-10	POLYESTOR-C 0.15 μF	4
C129	176-1007-04	CERAMIC-CHIP-C 10PFTH	1
C170～172	176-1012-00	CERAMIC-CHIP-C 100PFCH	3
C167～169	176-1802-00	CERAMIC-CHIP-C 18PFCH	3
C190,191	176-2202-00	CERAMIC-CHIP-C 22PFCH	2
C146	176-2212-00	CERAMIC-CHIP-C 220PFCH	1
C181,182	176-4702-00	CERAMIC-CHIP-C 47PFCH	2
C164,229,230	177-3332-05	CERAMIC-CHIP-C 0.033 μF	3
C115	177-3932-05	CERAMIC-CHIP-C 0.039 μF	1
C127,128,135 136,154,156 158,166	177-4732-05	CERAMIC-CHIP-C 0.047 μF	8
C124,149,152 208,219,302 304,402,404 606	178-1022-05	CERAMIC-CHIP-C 1000PF	10

REF NO.	PART NO.	DESCRIPTION	Q'TY
C104,106,109 111,122,123 131,141,163 173,188,189 209,210 212～215 221,601,604 607,903,907 909	178-1032-05	CERAMIC-CHIP-C 0.01 μF	25
C180,183	178-1045-06	CERAMIC-CHIP-C 0.1 μF	2
C138	178-2222-05	CERAMIC-CHIP-C 2200PF	1
C101,140,228	178-2232-05	CERAMIC-CHIP-C 0.022 μF	3
C125,126	178-2722-05	CERAMIC-CHIP-C 2700PF	2
C144,202	178-3312-05	CERAMIC-CHIP-C 330PF	2
C218,220	178-3322-05	CERAMIC-CHIP-C 3300PF	2
C118,133	178-4712-05	CERAMIC-CHIP-C 470PF	2
C103,145	178-4722-05	CERAMIC-CHIP-C 4700PF	2
C107	178-4735-06	CERAMIC-CHIP-C 0.047 μF	1
C231	178-6822-05	CERAMIC-CHIP-C 6800PF	1
C105	178-6832-05	CERAMIC-CHIP-C 0.068 μF	1
C508	179-2273-22	ELECTROLYTIC-C 10V 220 μF	1
C407,515	179-2273-23	ELECTROLYTIC-C 10V 220 μF	2
C553	179-3373-33	ELECTROLYTIC-C 16V 330 μF	1
C102,108,187	179-4763-22	ELECTROLYTIC-C 10V 47 μF	3
C113,157,159	182-1073-22	ELECTROLYTIC-C 10V 100 μF	3
C906	182-1073-32	ELECTROLYTIC-C 16V 100 μF	1
C319,419	182-2263-32	ELECTROLYTIC-C 16V 22 μF	2
C155	182-4763-42	ELECTROLYTIC-C 25V 47 μF	1
C201	183-1043-62	ELECTROLYTIC-C 50V 0.1 μF	1
C114,137,142 143,148,192 203,204,206 624,908	183-1053-62	ELECTROLYTIC-C 50V 1 μF	11
C110,112,116 117,132,134 160,195,205 211,222,306 309,312,406 409,412,505 514,555,603 605,902,904 910,950	183-1063-32	ELECTROLYTIC-C 16V 10 μF	26
C216	183-1073-12	ELECTROLYTIC-C 6.3V 100 μF	1
C310,410	183-2243-62	ELECTROLYTIC-C 50V 0.22 μF	2
C130	183-2253-62	ELECTROLYTIC-C 50V 2.2 μF	1

◎ SUB-PWB

REF NO.	PART NO.	DESCRIPTION	Q'TY
D510	001-0334-00	DIODE DSA17B	1
D650	001-0376-32 001-0377-32	DIODE MTZ5.6JB DIODE MA4056M	1
D503	001-0360-00	DIODE S5566B	1
D504	001-0466-00	DIODE S5688B	1
L502	009-0470-05	CHOKE	1
R554,555	032-0084-00	FUSE RESISTOR 1/4W 10Ω	2
C610	042-0378-00	ELECTROLYTIC-C 10V 220 μF	1
C511,551	042-0440-00	ELECTROLYTIC-C 16V 1000 μF	2
IC606	051-0624-00	IC TA78008AP	1
Q504	100-1297-00	TRANSISTOR 2SA1297	1
Q625	102-3420-00	TRANSISTOR 2SC3420	1

REF NO.	PART NO.	DESCRIPTION	Q'TY
Q301,302,401 402	103-1450-50	TRANSISTOR 2SD1450	4
Q506	125-2003-03	TRANSISTOR RN1203	1
R551	114-2211-21	FILM-RESISTOR 2W 220Ω	1
C620	173-1032-10	POLYESTOR-C 50V 0.01 μF	1
C552,622	173-1042-10	POLYESTOR-C 50V 0.1 μF	2
C518	179-1073-32	ELECTROLYTIC-C 16V 100 μF	1
C513	179-3373-33	ELECTROLYTIC-C 16V 330 μF	1
C612	179-4763-22	ELECTROLYTIC-C 10V 47 μF	1
C621	182-2263-22	ELECTROLYTIC-C 10V 22 μF	1
C623	182-4763-32	ELECTROLYTIC-C 16V 47 μF	1
C317,417	183-2253-62	ELECTROLYTIC-C 50V 2.2 μF	2

◎ ESCUTCHEON PWB

REF NO.	PART NO.	DESCRIPTION	Q'TY
IC701	051-1151-00	IC μPD7225G-00	1
R663	117-1021-10	CHIP-RESISTOR 1/10W 1kΩ	1
R701	117-1841-10	CHIP-RESISTOR 1/10W 180kΩ	1
R702,703,704	117-3321-10	CHIP-RESISTOR 1/10W 3.3kΩ	3

REF NO.	PART NO.	DESCRIPTION	Q'TY
R606	117-4711-10	CHIP-RESISTOR 1/10W 470Ω	1
R661,662	117-5611-10	CHIP-RESISTOR 1/10W 560Ω	2
C701	178-1032-05	CERAMIC-CHIP-C 0.01 μF	1
C602	183-1063-32	ELECTROLYTIC-C 16V 10 μF	1

■TAPE MECHANISM ELECTRICAL SECTION

◎PRE-P.W.B

REF.NO.	PART NO.	DESCRIPTION	Q'TY
IC2	051-0620-00	IC LA2000	1
IC1	051-0714-01	IC TA7705F	1
Q1	102-3402-00	Transistor 2SC3402	1
R5,9,18	116-1011-10	Chip resistor 1/8W100Ω	3
R19	116-1541-10	Chip resistor 1/8W150kΩ	1
R14	117-1031-10	Chip resistor 1/10W10kΩ S	1
R7,11	117-1131-10	Chip resistor 1/10W11kΩ S	2
R8,10	117-1531-10	Chip resistor 1/10W15kΩ S	2
R1~4	117-3331-10	Chip resistor 1/10W33kΩ S	4
R12	117-3341-10	Chip resistor 1/10W330kΩ S	1

REF.NO.	PART NO.	DESCRIPTION	Q'TY
C15	172-3332-20	Polyester capacitor 0.033μF SS	1
C6,9	173-1231-10	Polyester capacitor 0.012μF S	2
C12	173-4721-10	Polyester capacitor 4700pF S	1
C1~4	173-5611-10	Polyester capacitor 560pF S	4
C14	183-1053-62	Electrolytic capacitor 50V1μF USS	1
C7	183-1063-32	Electrolytic capacitor 16V10μF USS	1
C13	183-4743-62	Electrolytic capacitor 50V0.47μF USS	1
C10,11	183-4753-52	Electrolytic capacitor 35V4.7μF USS	2
C5,8	183-4763-12	Electrolytic capacitor 6.3V47μF USS	2
C16	183-4763-32	Electrolytic capacitor 16V47μF USS	1

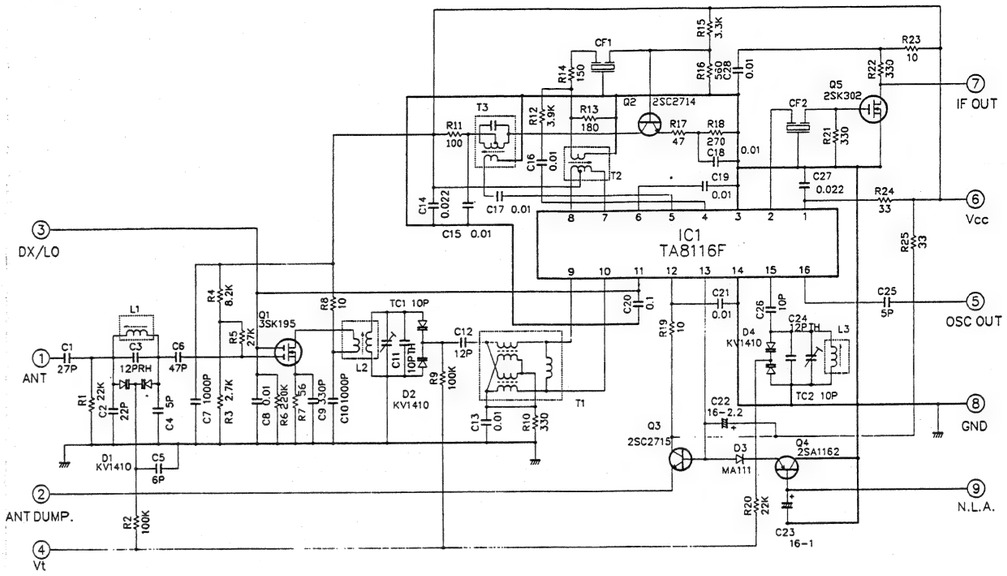
◎BOTTOM-P.W.B

REF.NO.	PART NO.	DESCRIPTION	Q'TY
SW4	013-3937-00	Switch	1
SW1,2	013-3863-00	Switch	2

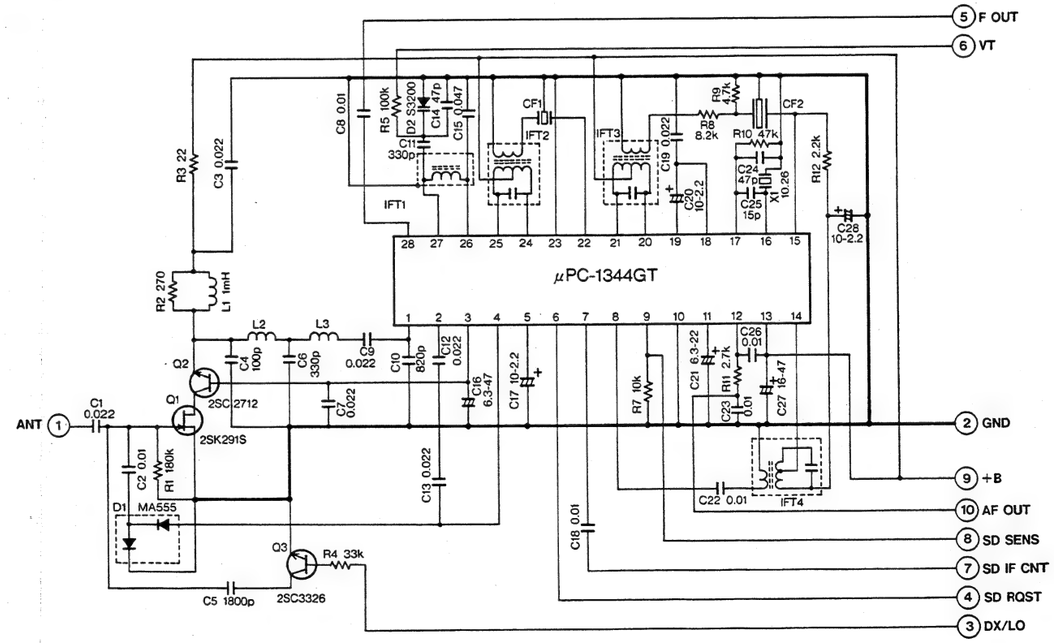
REF.NO.	PART NO.	DESCRIPTION	Q'TY
SW3	013-3863-01	Switch	1
IC3,4	051-1114-00	IC NJL5161K	2

NOTE : OM (Oxidized Metal) SS (Super Small)
S (Small) TC (Temperature-Compensating)
HD (Higher Dielectric) LL (Low Leak)
SC (Semi-Conductor) USS (Ultra Super Small)

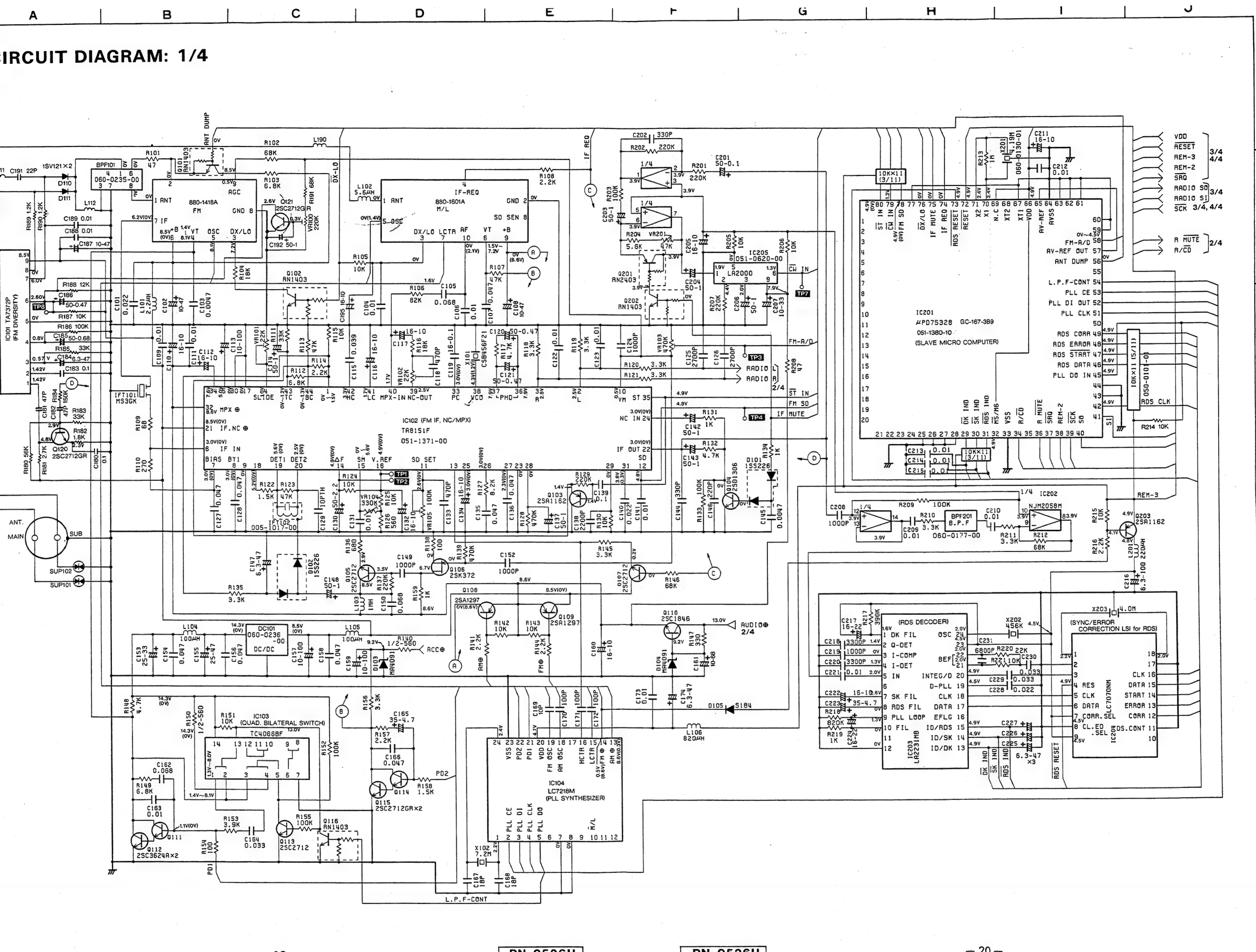
■FM TUNER PACK: 880-1418A



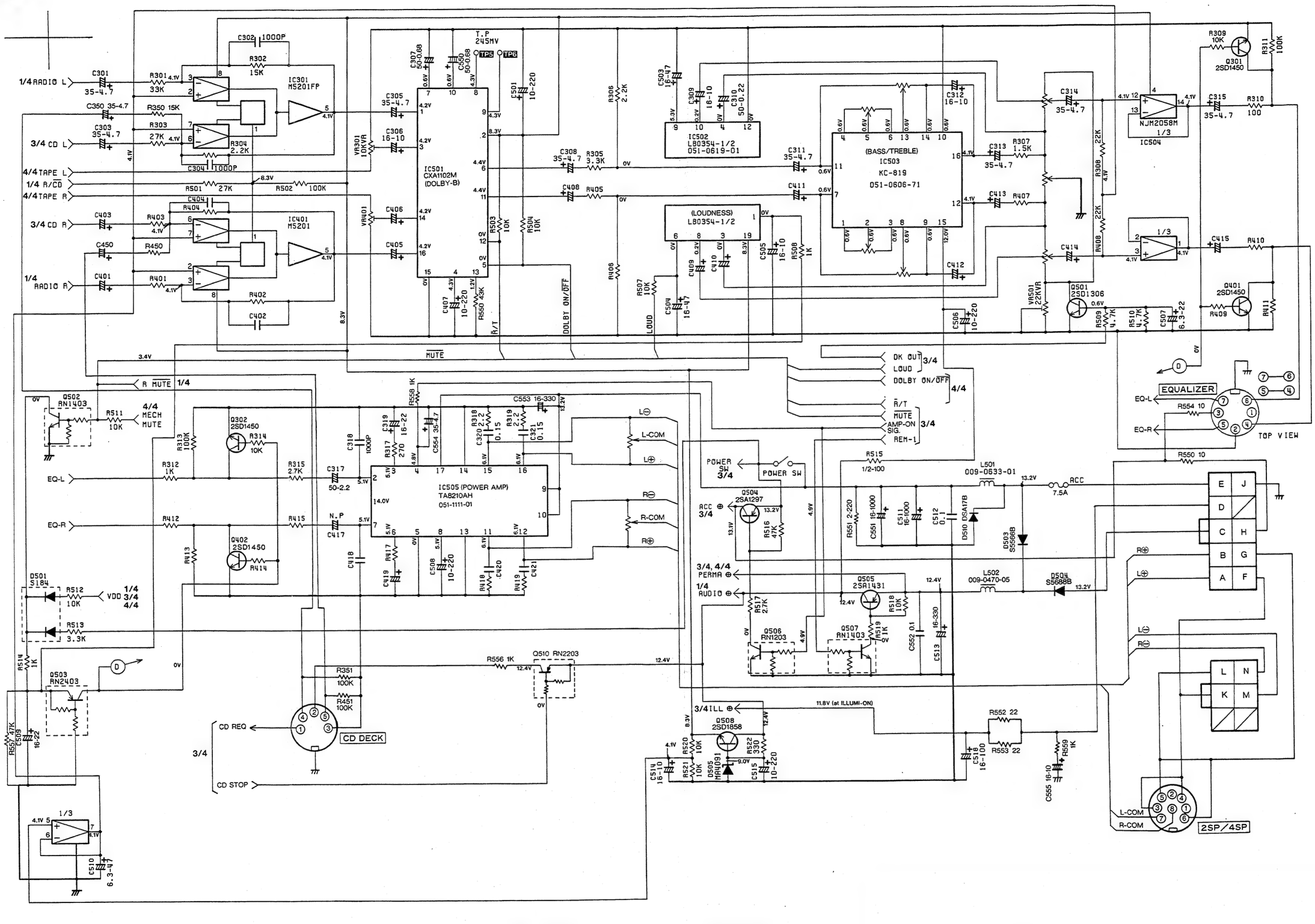
■MW/LW TUNER PACK: 880-1601A



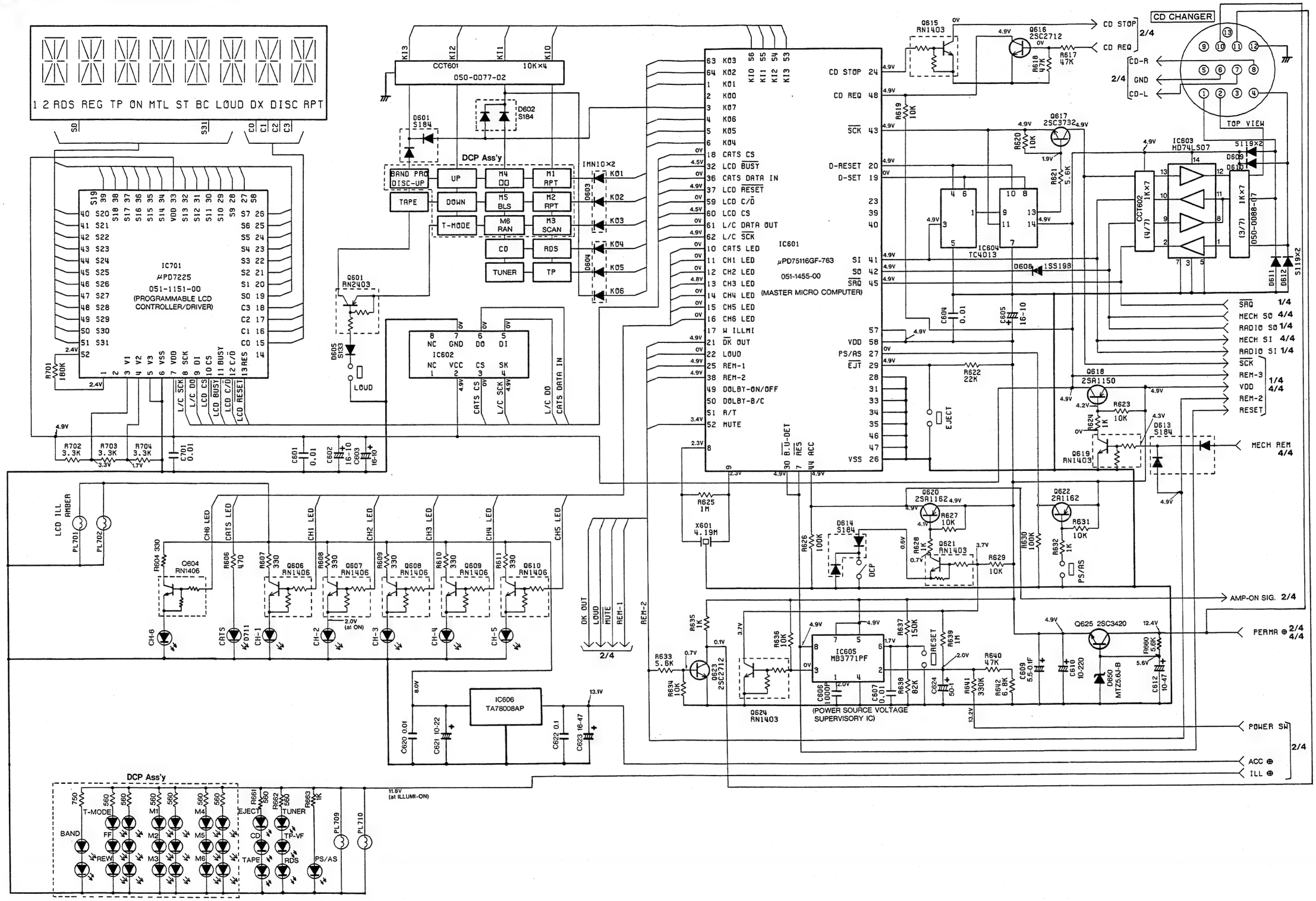
■CIRCUIT DIAGRAM: 1/4



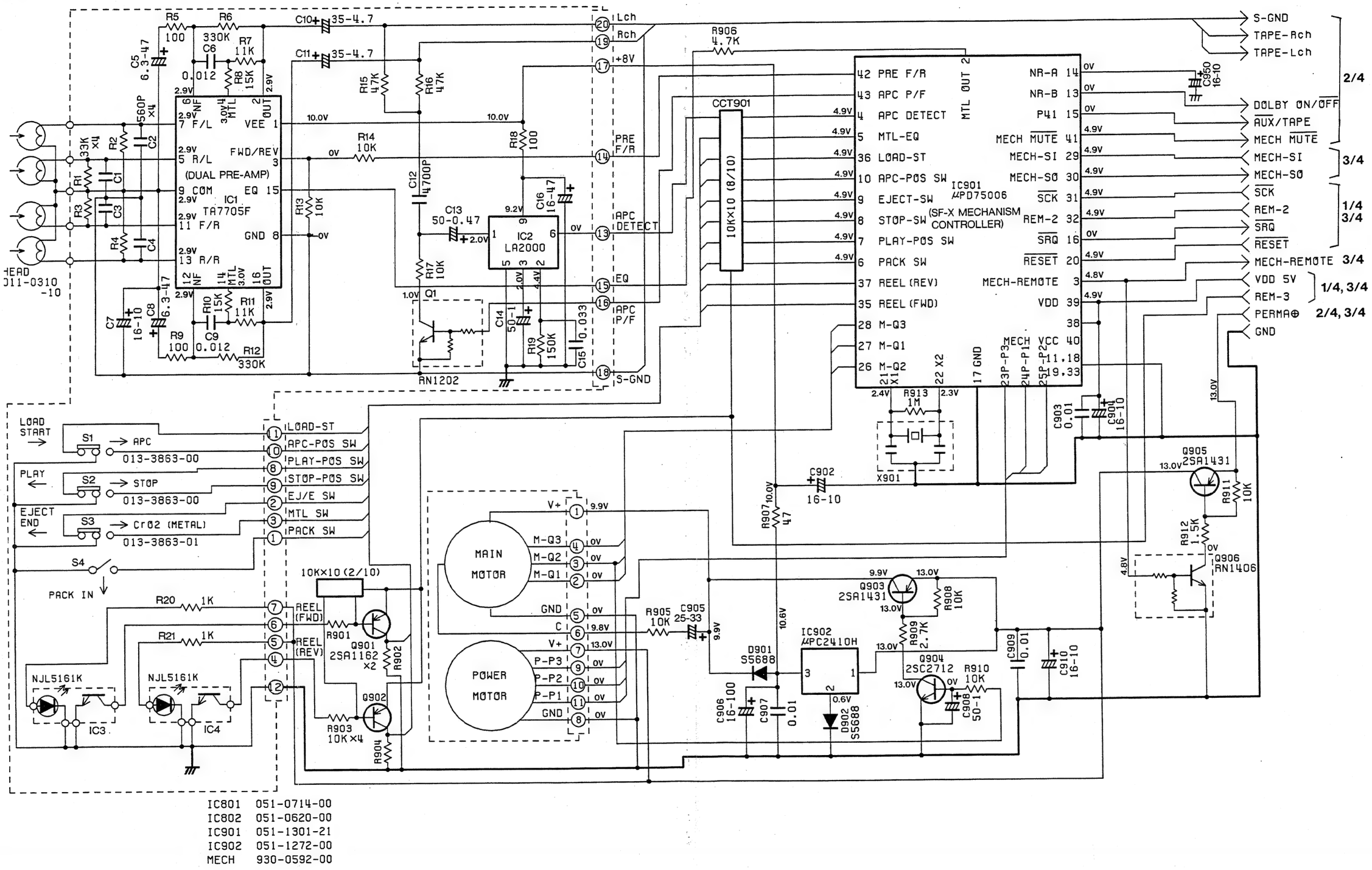
■CIRCUIT DIAGRAM: 2/4



■CIRCUIT DIAGRAM: 3/4

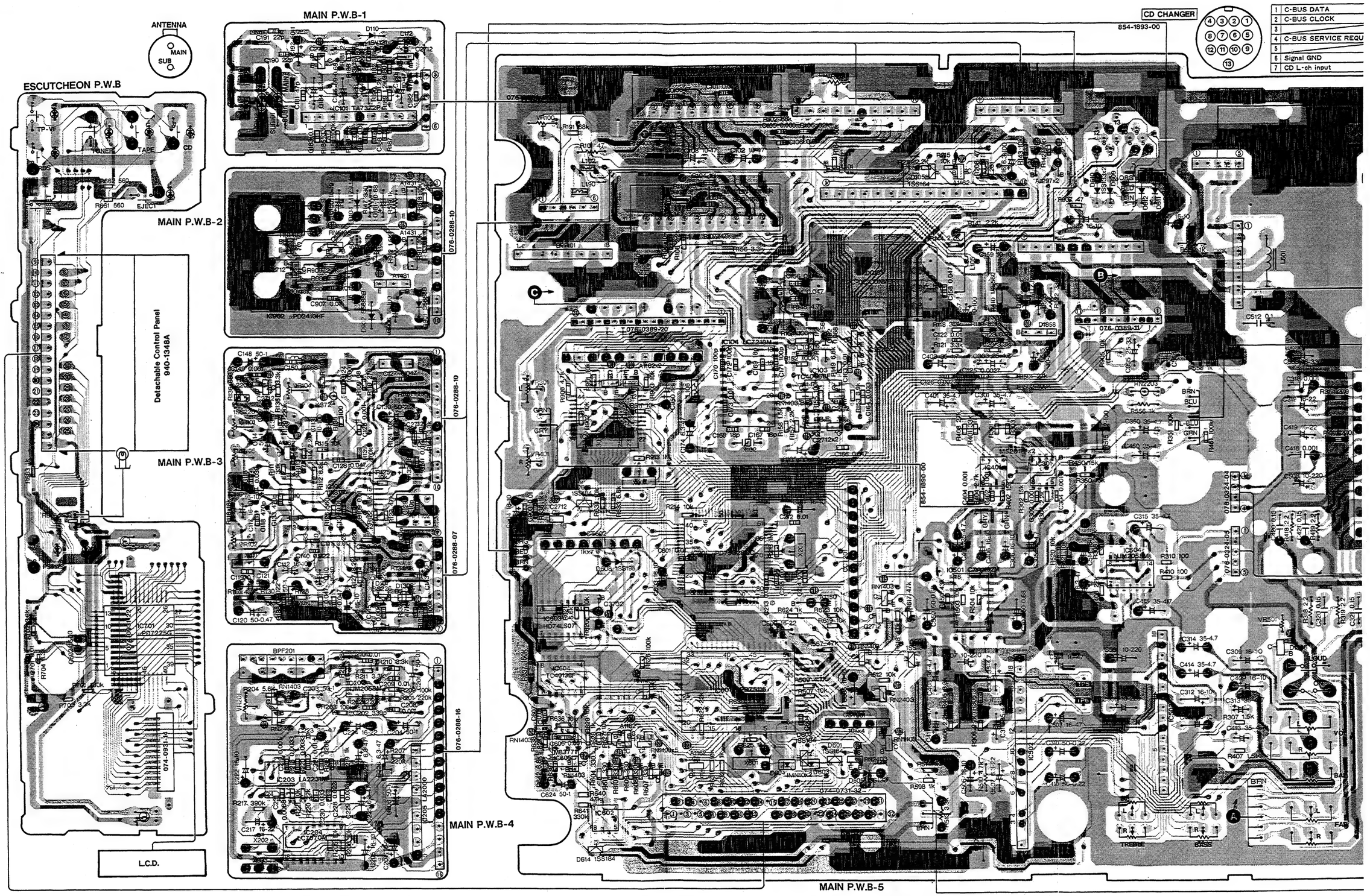


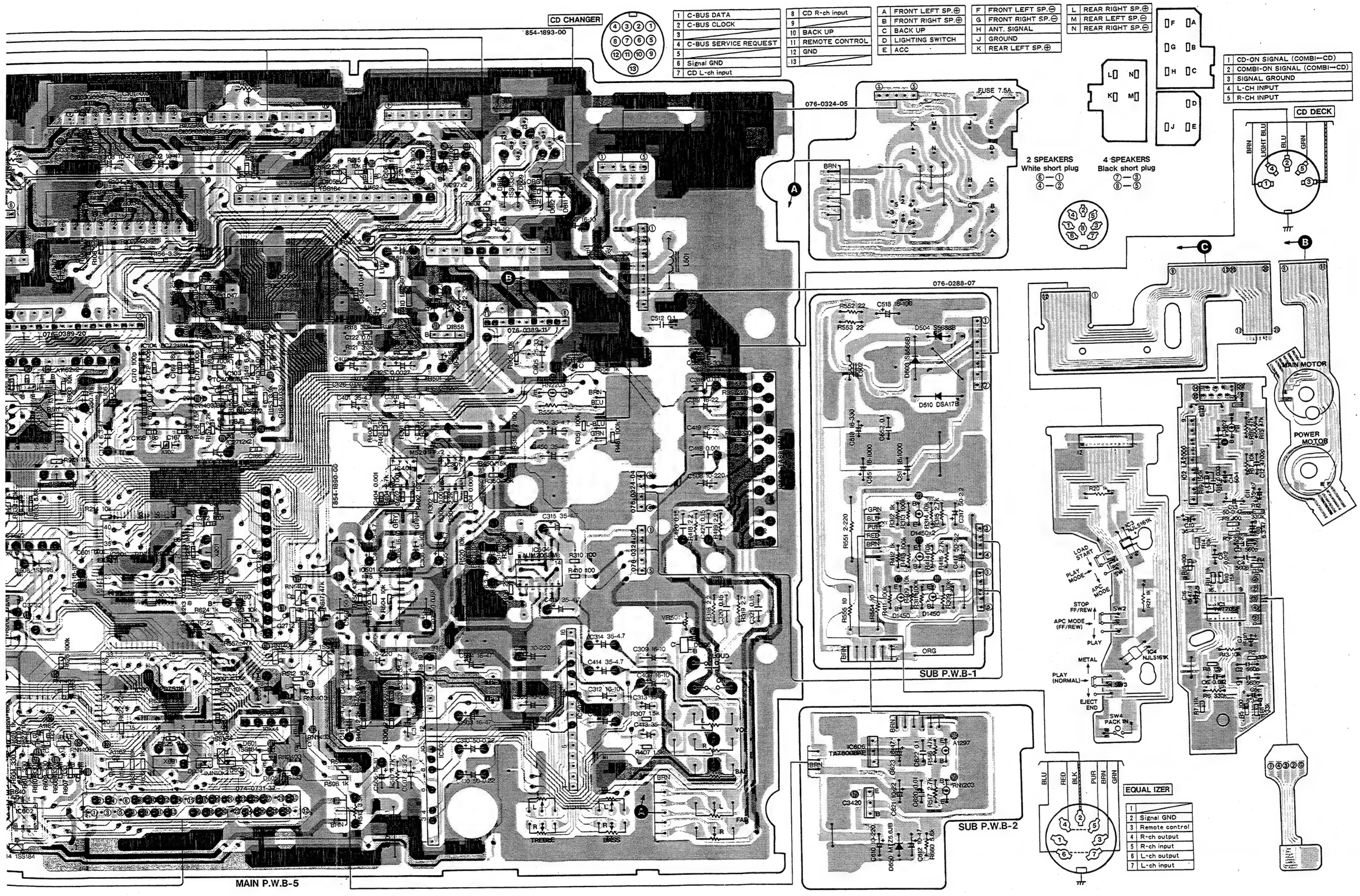
■CIRCUIT DIAGRAM: 4/4



IC801 051-0714-00
IC802 051-0620-00
IC901 051-1301-21
IC902 051-1272-00
MECH 930-0592-00

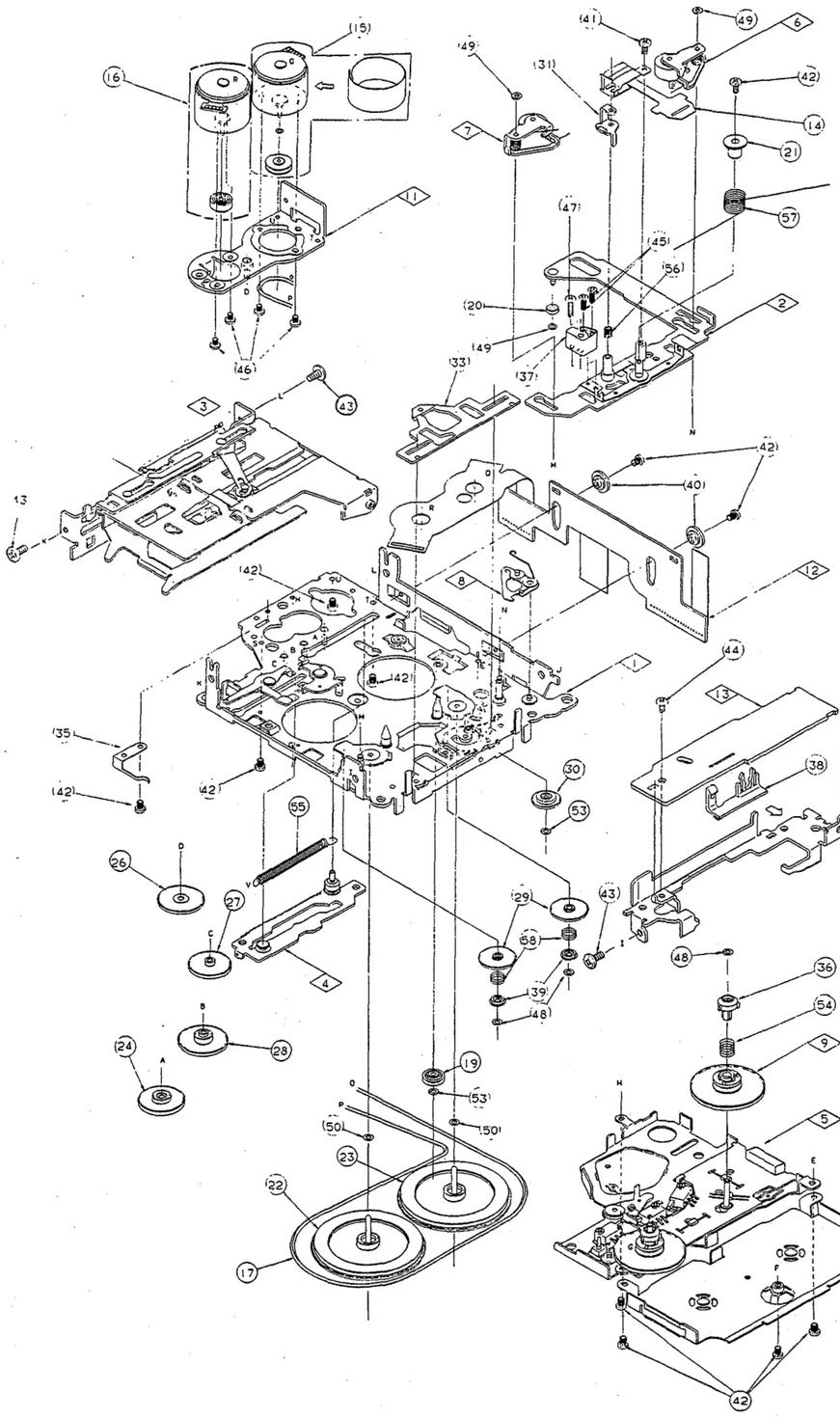
■PRINTED WIRING BOARD:




CD CHANGER
854-1893-00
1 C-BUS DATA
2 C-BUS CLOCK
3
4 C-BUS SERVICE REQUEST
5
6 Signal GND
7 CD L-ch input
8 CD R-ch input
9
10 BACK UP
11 REMOTE CONTROL
12 GND
13
A FRONT LEFT SP.⊕
B FRONT RIGHT SP.⊕
C BACK UP
D LIGHTING SWITCH
E ACC
F FRONT LEFT SP.⊖
G FRONT RIGHT SP.⊖
H ANT. SIGNAL
J GROUND
K REAR LEFT SP.⊕
L REAR RIGHT SP.⊕
M REAR LEFT SP.⊖
N REAR RIGHT SP.⊖
1 CD-ON SIGNAL (COMBI→CD)
2 COMBI-ON SIGNAL (COMBI→CD)
3 SIGNAL GROUND
4 L-CH INPUT
5 R-CH INPUT
CD DECK
BRN
LIGHT BLU
BLU
GRN
076-0324-05
FUSE 7.5A
2 SPEAKERS
White short plug
6—1
4—2
4 SPEAKERS
Black short plug
7—3
6—5
076-0288-07
076-0389-20
076-0389-11
076-0731-32
MAIN P.W.B-5
SUB P.W.B-1
SUB P.W.B-2
MAIN MOTOR
POWER MOTOR
LOAD START
PLAY MODE
APC MODE
STOP FF/REW
APC MODE (FF/REW)
PLAY
METAL
PLAY (NORMAL)
EJECT END
SW1
SW2
SW4 PACK IN
EQUAL IZER
1
2 Signal GND
3 Remote control
4 R-ch output
5 R-ch input
6 L-ch output
7 L-ch input
BLU
RED
BLK
PUR
BRN
GRN
TREBLE
BASS
FAD
BAL
VOL
LOUD

■EXPLODED VIEW • PARTS LIST:

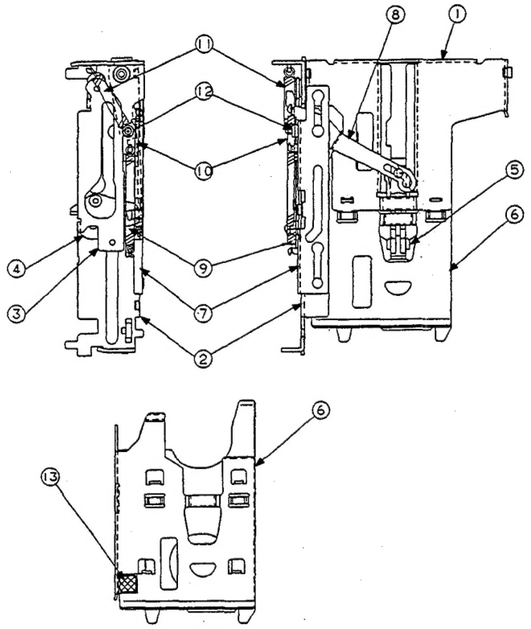
◎Tape mechanism section (SF-X TYPE 0) 930-0592-04



REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	960-4102-07	Deck plate ass'y	1
2	960-4093-05	Head plate ass'y	1
3	960-4107-06	Eject sub ass'y	1
4	960-4011-05	Mode plate ass'y	1
5	960-4106-04	Bottom sub ass'y	1
6	960-4050-03	Roller sub ass'y F	1
7	960-4051-03	Roller sub ass'y R	1
8	960-4099-04	CH-hold ass'y	1
9	960-4016-03	Reel base ass'y F	1
10	960-4105-03	Flywheel plate sub ass'y	1
11	960-4129-02	Motor plate ass'y	1
12	099-8928-00	P.W.B	1
13	099-8989-01	PRE-P.W.B	1
14	011-0310-20	Head	1
15	SMA-123-100	Main motor	1
16	SMA-122-101	Power motor	1
17	602-0111-00	Belt	1
19	604-0036-03	Tension pulley	1
20	610-0316-01	Head-P-roller-M	1
21	610-0322-01	CH-link sleeve	1
22	611-0084-02	Flywheel R	1
23	611-0085-02	Flywheel F	1
24	613-0122-01	Shift-P-gear	1
26	613-0246-00	Gear A	1
27	613-0247-00	Gear B	1
28	613-0248-00	Gear C	1
29	613-0249-00	Play idler gear	2

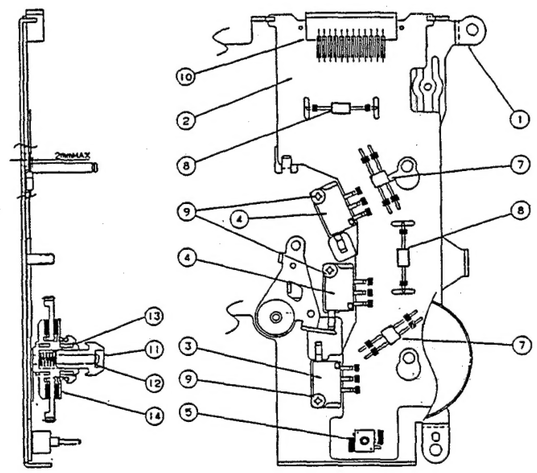
REF.NO.	PART NO.	DESCRIPTION	Q'TY
30	613-0250-00	Change gear A	1
31	630-2342-04	Adjust link	1
32	630-2388-03	P.W.B frame TZ	1
33	630-2343-04	Change plate	1
35	630-2413-01	Motor spring	1
36	631-0601-01	Slide bush	1
37	631-0650-00	Adjust base	1
38	631-0636-00	Guide base	1
39	631-0637-00	Idler roller	2
40	631-0640-00	P.W.B guide C	2
41	714-2003-81	Machine screw (M2x3)	1
42	714-2004-81	Machine screw (M2x4)	11
43	714-3004-11	Machine screw (M3x4)	4
44	714-2604-11	Machine screw (M2.6x4)	1
45	716-0833-02	Azimuth screw	2
46	716-0835-00	Motor screw	4
47	739-2090-17	Precision screw	1
48	746-0761-00	Washer	3
49	746-0768-00	Washer	3
50	746-0624-00	Washer	2
53	746-0724-00	Washer	2
54	750-2720-00	Slide spring	1
55	750-2718-00	Mode-P-spring	1
56	750-2721-02	Azimuth spring	1
57	750-2790-01	HP-spring	1
58	750-2793-01	Idler spring	2

◎EJECT SUB Ass'y 960-4107-06



REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	960-4007-03	Guide arm ass'y	1
2	960-4108-04	Side frame ass'y	1
3	960-4009-05	Eject-P-ass'y	1
4	960-4010-04	Eject link ass'y	1
5	631-0599-04	Pack stopper	1
6	606-0090-07	Pack guide	1
7	960-4057-04	Loading-P-ass'y	1
8	630-2340-01	Swing arm	1
9	750-2791-00	Load-P-spring	1
10	750-2716-01	Swing-A-spring	1
11	750-2719-01	Guide arm spring	1
12	610-0314-02	Guide-A-roller	1
13	746-0816-00	Pack set washer	1

◎BOTTOM SUB Ass'y 960-4106-04



REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	960-4096-03	Bottom-P-ass'y	1
2	099-9396-00	P.W.B	1
3	013-3863-01	Switch	1
4	013-3863-00	Switch	2
5	013-3937-00	Switch	1
7	051-1114-00	IC (NJL5161K-P)	2
8	111-1021-91	Film resistor (1kΩ)	2
9	716-0834-00	Screw	3
10	074-0931-12	FPC connector	1
11	631-0601-01	Slide bush	1
12	746-0761-00	Washer	1
13	750-2720-00	Slide spring	1
14	960-4015-03	Reel base ass'y	1

■ADJUSTMENT OF MECHANISM:

1. Adjustment of tape speed

Reproducing the 3kHz speed tape, adjust VR inside the motor so that the reading of frequency counter becomes within the range of 2990Hz to 3100Hz. (Refer to Fig. 1)

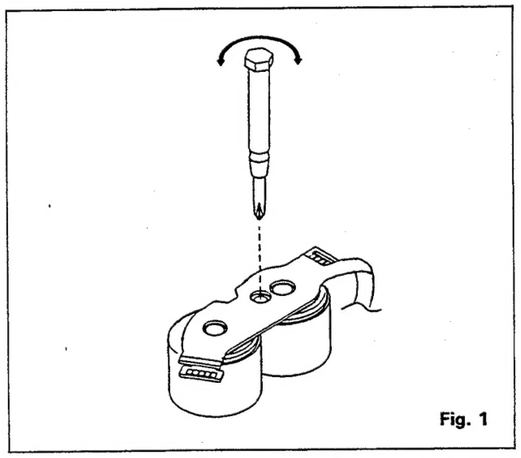


Fig. 1

2. Adjustment of head azimuth

(1) Play back azimuth tape (10kHz, −10dB) and adjust the screw so that the peak of FWD and REV will be 10kHz.
(Refer to Fig. 2)
As shown in the figure, ⓐ turn in the direction ⓐ tilts the head upward and a turn in the direction ⓑ tilts it downward.

(2) After completion of adjustment, apply LOCK-TIGHT Bond to the ⓒ section.
(Refer to Fig. 2)

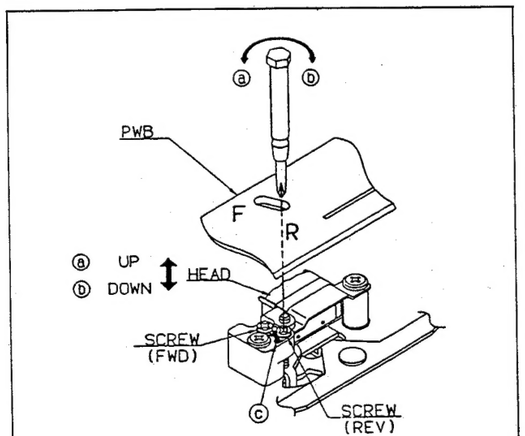


Fig. 2

■REPLACEMENT OF MECHANISM PARTS:

1. Replacement of belt, flywheel and reel base ass'y

(1) Remove Screws Ⓐ (4 pcs.).
(Refer to Fig. 3)

(2) Remove the flywheel-P-ass'y and then the bottom sub ass'y.

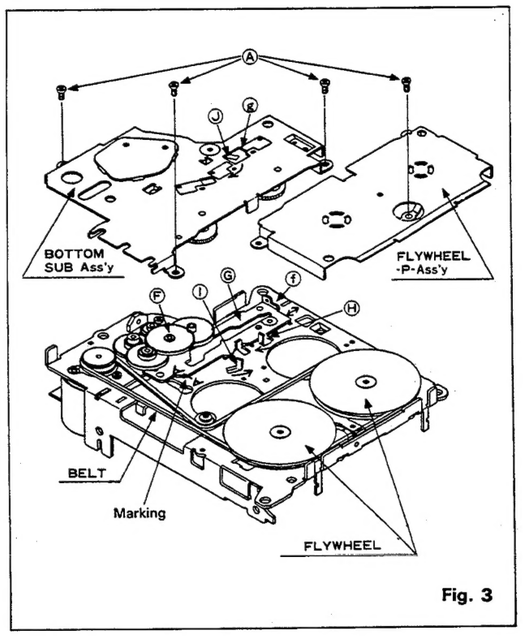


Fig. 3

(3) Replace the belt with a new one.
※Pay attention so that oils such as MR paste do not stick to the belt.
Replace the flywheel with a new one.
(Refer to Fig. 4).
※When replacing the flywheel, apply FLOIL947P to Section ⓓ.
Note: Use specified oils.

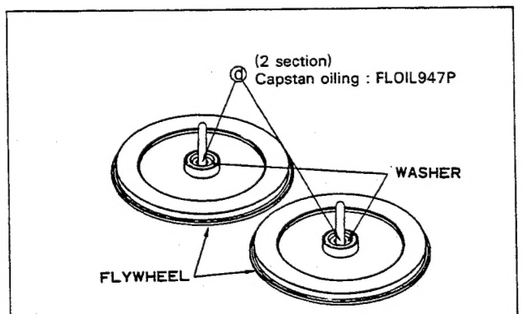


Fig. 4

(4) Replacement of reel base ass'y
(Refer to Fig. 5)
(a) Remove the special washer Ⓒ (ϕ3.2 split).
(b) Remove the slide bushing Ⓓ and slide spring Ⓔ.
(c) Replace the reel base ass'y with a new one.
※When replacing the reel base ass'y, apply FLOIL G-488 to the section ⓔ of the reel shaft. Also check F and R sides of the reel base ass'y. The F side of the reel base ass'y is identified with blue, and the R side with white.
(d) Reassemble the reel base ass'y in the reverse order of (a) and (b).

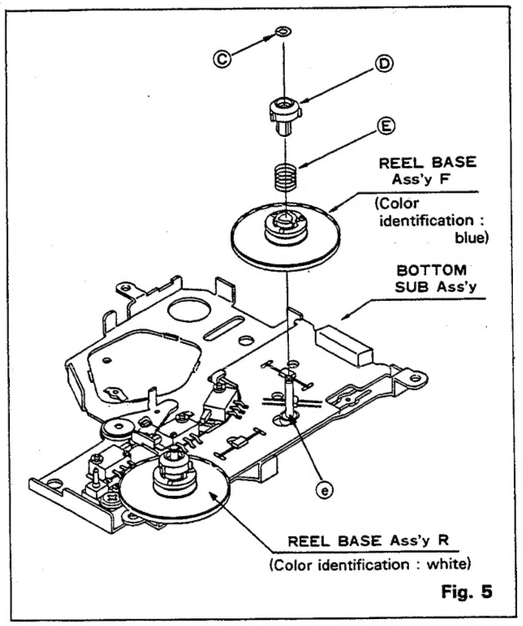


Fig. 5

(5) Following replacement of the belt, flywheel and reel base ass'y, remove the gear C Ⓕ and move Section ⓕ of the mode plate ass'y Ⓖ in the arrowed direction to make marks A-A fit. (Refer to Fig. 3).
※Moving the mode plate ass'y Ⓖ without removing the gear C Ⓕ causes chipping of gears.

(6) Hold Ⓕ again.

(7) Move links of Ⓗ and Ⓘ to the arrowed direction.

(8) Push the link Ⓙ of the bottom sub ass'y toward the arrowed direction through the hole ⓖ so that the reel base ass'y is placed below the flywheel. Holding this condition, drop the bottom sub ass'y.

(9) Reassemble the flywheel-P-ass'y and fasten it with Screws Ⓐ (4 pcs.).

2. Replacement of head

(1) Remove solder from 5 points at Section ⓗ. (Refer to Fig. 6).

(2) Loosen Screws Ⓚ (2 pcs.) to remove the frame sub ass'y.

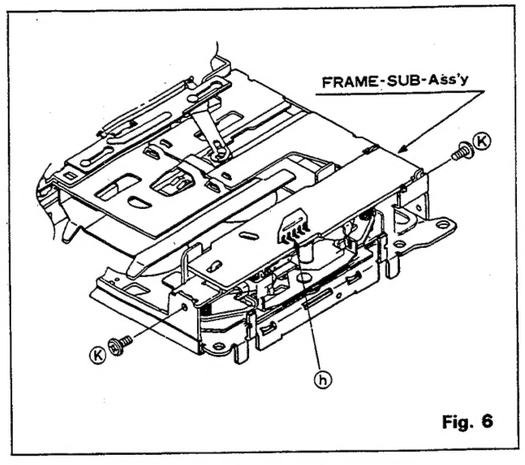


Fig. 6

(3) Remove the screw Ⓛ and then ADJUST-BASE Ⓜ.

(4) Remove the screw Ⓝ, lift ADJUST-LINK Ⓞ and replace the head. (Refer to Fig. 7)

(5) Re-assemble FRAME-SUB-ASS'Y in the reverse procedures of 1 to 4.

(6) Perform the azimuth adjustment of the head.

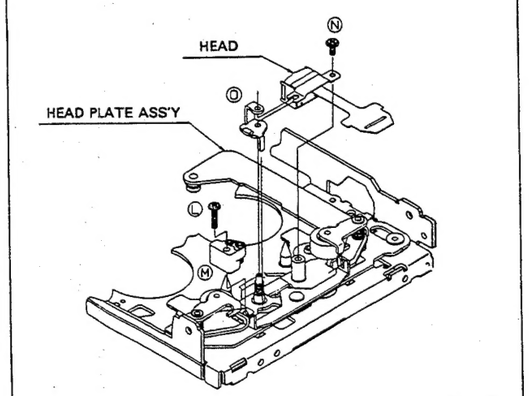
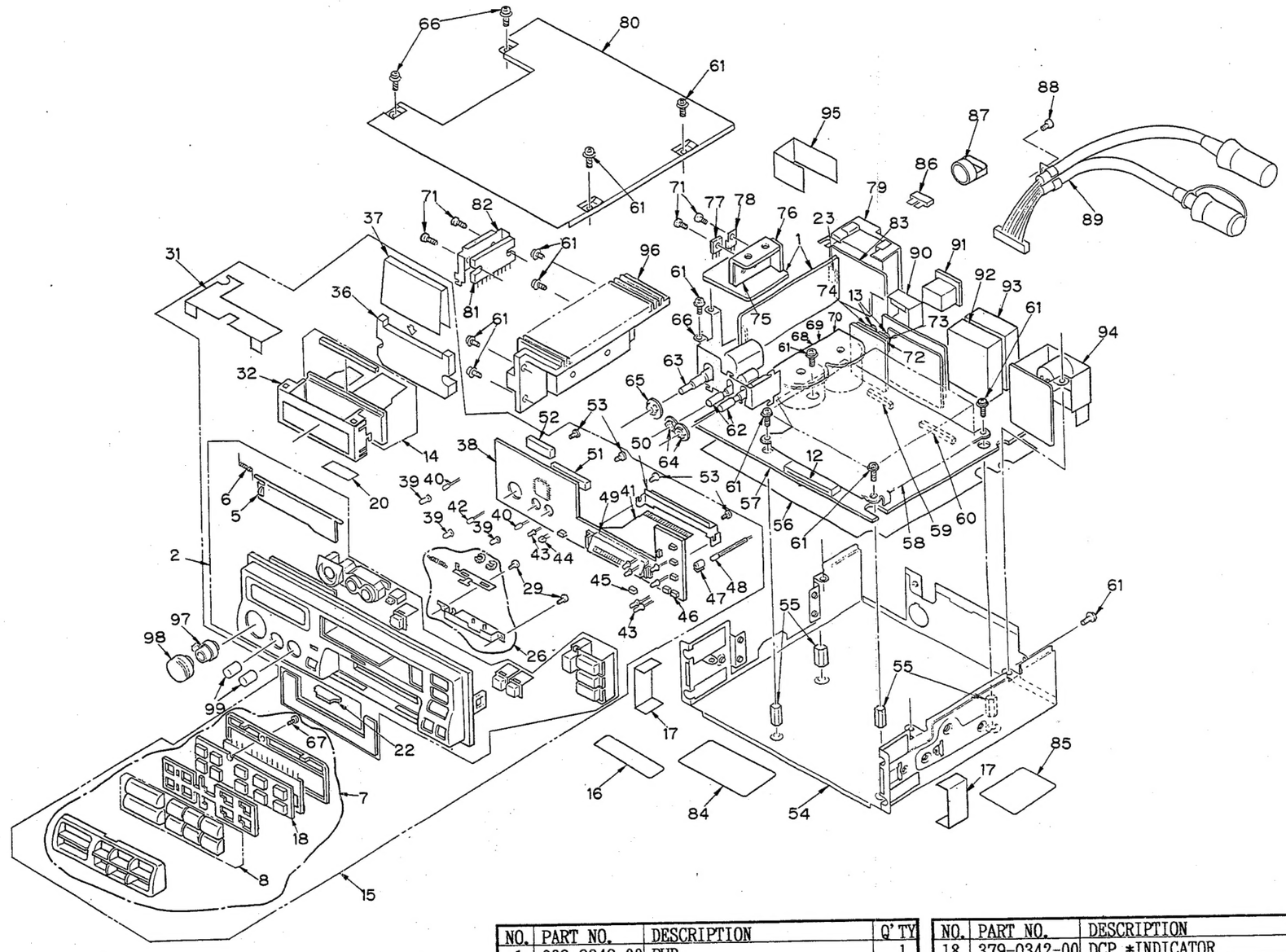


Fig. 7

■EXPLODED VIEW • PARTS LIST:

◎Main section



NO.	PART NO.	DESCRIPTION	Q'TY
1	099-9348-00	PWB	1
2	940-1347A	SUB ESCUTCHEON-ASSY	1
5	320-0449-08	DUSTPROOF-CVR	1
6	750-2309-04	SPRING	1
7	940-1348A	DCP ASS'Y	1
8	947-0271-00	BUTTON ASSY	1
12	074-0731-32	OUTLET SOCKET	1
13	714-2608-81	MACHINE SCREW	2
14	379-0025A	LCD-ASSY	1
15	940-1346A	ESCUTCHEON ASSY	1
16	347-3315-00	SHADE	1
17	347-3458-00	SHIELD PAPER	2

NO.	PART NO.	DESCRIPTION	Q'TY
18	379-0342-00	DCP *INDICATOR	1
20	347-3182-00	SHADE	1
22	382-2426-00	BUTTON *DCP-EJECT	1
23	330-9317-00	PWB SUPPORT	2
26	330-0004A	LOCK LEVER ASSY	1
29	716-0674-00	SCREW *DCP HOOK	2
31	347-3375-00	CONDUCTOR	1
32	330-9393-00	LCD HOLDER	1
36	335-3380-00	ILLUMI PLATE	1
37	347-3240-00	REFLECTOR	1
38	099-9351-01	PWB	1
39	345-2830-79	PL CAP	3

NO.	PART NO.	DESCRIPTION	Q'TY
40	017-0373-00	PILOTLAMP	2
41	099-9350-00	FLEXIBLE PWB	1
42	017-0345-09	PILOTLAMP	1
43	001-0576-01	DIODE	7
44	001-0459-01	DIODE	1
45	013-3868-00	SWITCH *RESET	1
46	013-3741-01	SWITCH	7
47	345-3335-09	PL HOLDER	1
48	017-0345-22	PILOTLAMP	1
49	074-0913-00	OUTLET SOCKET	1
50	330-9523-00	CONNECTOR HOLDER	1
51	074-0931-22	OUTLET SOCKET	1
52	074-0931-14	OUTLET SOCKET	1
53	716-0674-00	STEEL SCREW *PWB	4
54	311-1489-01	LOWER CASE	1
55	716-1461-00	SPACER *MECH	4
56	347-3376-01	INSULATOR	1
57	099-9347-01	PWB	1
58	930-0592-04	TAPE MECHANISM	1
59	076-0389-11	PLUG *11P	1
60	076-0389-20	PLUG *20P	1
61	716-0878-00	IT-SCREW	14
62	012-5031-00	VARIABLE-R *BASS/TREB	2
63	012-5030-00	VARIABLE-R *MAIN	1
64	722-0433-00	NUT *BASS/TREB	2
65	722-0370-00	NUT *MAIN	1
66	330-9570-00	VOL-HOLDER	1
67	716-1521-00	WAVE SCREW *2X6	1
68	313-1436-00	HEAT SINK *MOTOR	1
69	347-3416-00	INSULATOR *MOTOR	1
70	347-3259-00	DOUBLE FACE *MOTOR	1
71	714-2610-81	MACHINE SCREW	4
72	313-1422-00	HEAT SINK	1
73	102-1846-00	TRANSISTOR 2SC1846	1
74	051-1272-00	IC μPC2410HF	1
75	330-9409-00	HEAT HOLDER	1
76	313-1423-00	HEAT SINK	1
77	102-3420-00	TRANSISTOR 2SC3420	1
78	051-0624-00	IC TA78008AP	1
79	074-0944-00	OUTLET SOCKET	1
80	303-0395-00	UPPER-COVER	1
81	051-1111-01	IC *TA8210AH	1
82	330-9528-00	IC HOLDER	1
83	099-9349-00	PWB	1
84	286-6936-21	SETPLATE	1
85	285-1485-01	GUIDE LABEL	1
86	060-0057-55	AUTO FUSE *7.5A	1
87	076-0397-01	PLUG *4SP-2SP	1
88	714-3005-81	MACHINE SCREW *DIN	1
89	854-2284-00	EXTENSION LEAD	1
90	330-9126-00	DIN-SOCKET	1
91	074-0818-00	OUTLET SOCKET	1
92	880-1601A	LW/MW BLOCK-ASSY	1
93	880-1418A	FM BLOCK-ASSY	1
94	330-9571-00	PWB-HOLDER *ANT	1
95	347-3415-00	INSULATOR *RDS PWB	1
96	313-1448-00	HEAT SINK	1
97	380-5191-00	KNOB *FAD	1
98	380-5190-00	KNOB *VOL	1
99	380-5192-00	KNOB *BASS/TREB	2

Printed in Japan 298-4437-00 MAY 1991 ©